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HOW CAN A LEGITIMATE JOBBER MAKE A LEGITIMATE PROFIT?

This question was raised in our issue of April 15th, and we have received several interesting comments and opinions on it. It seems to be of sufficient interest to be considered editorially.

Some of the arguments advanced are to the effect that the jobbing-trade is so demoralized that the jobber must go, and future business will be conducted between the manufacturer and the retailer direct. This, we think, is just about as reasonable as that which would put retail stores out of business and restrict all future trading between the manufacturer and the consumer.

The illegitimate jobber must go. There is no doubt of that. There are several kinds of jobbers, and in our consideration of them we must endeavor to distinguish between the jobber who jobs, and the jobber who jobs for jobbing's sake.

In the dictionaries there are four definitions of the word "jobber":

One who buys in bulk from the importer or manufacturer and sells to the retailer.

One who transacts business, especially public business, so as to obtain an unfair advantage or profit for himself or others; hence, a low intriguer, as in politics.

One who works by the job, or does small jobbing.

One who jobs, or stabs.

The illegitimate jobber belongs under any one of the last three definitions. He may job, or stab at jobbing; in crude words, he "monkeys" with it. He has no reserve capital; no business stability; no suitable place of business; his office is under his hat, and the office is never cleaned out.

The jobber who jobs by the job or does small jobbing, is first-cousin to the journeyman plumber, who aims to be a master plumber and plays at it on occasional odd contracts. He secures his goods through the illegitimate jobber, and the two of them have their horizon of opportunity limited by commercial odds and ends. They may make a bare living out of it. They are poor gamblers and bad losers.

The other kind of illegitimate jobber coming under the second definition is well enough known not to need extensive description. He is a grafter. He obtains his contracts by wire-pulling. He is a substitutor of goods, the substitution being effected regardless of specifications through his immunity obtained by unholy alliances with the contractor. There is no doubt about it, the illegitimate jobber must go.

The legitimate jobber has always been, and must always be. There are few manufacturing concerns which can afford to have a branch office in every important city. There are fewer still that can make money by doing so. On the other hand, there are few retailers with establishments large enough and business of sufficient volume to allow of their carrying any more than a moderate percentage of marketable goods in stock. The jobber is the natural go-between, or mediator between the manufacturer and the retailer. He is a useful factor in the rapid transaction of business. He is the co-operator to greater efficiency in the supplying of public demand. We need the legitimate jobber. We cannot dispense with him. We must see that he retains his place in our commercial dealings.

The illegitimate jobber apparently is not complaining. The inquiry is not, How can an illegitimate jobber make an illegitimate profit? but, How can a legitimate jobber make a legitimate profit? Apparently, the illegitimate one desires no assistance.

Commercial success in any age or line is proportionate to the harmony that exists between the various parties interested. A sale is only a sale when a customer is satisfied. A sale is only a sale when the seller is satisfied. A sale is only a sale when all those participating in the arrangements for the manufacturing, buying, selling and the delivery are also satisfied. If legitimate jobbers find it difficult to make a legitimate profit, there should not be much difficulty in ascertaining the possible causes. First, the manufacturer may have reduced selling-price in competition to such a low figure that the jobber's commission is not sufficient to take care of his overhead expenses. Second, the jobber may be selling his goods to the retailer through competition at such a low figure that he eliminates profit, on the gambling possibility of making good next time. Third, he may be selling his goods at a figure which does not include provision for his overhead expenses. He may not know he has any. There are jobbers that do know who still think they have none. They are not legitimate jobbers.

The following letter from O. J. Saxe, Boston, Mass., is timely, and covers the ground of the alternatives that await the legitimate jobbers in their efforts to acquire a legitimate profit. He offers a cure which is marked by the word "if," but he hits a partial solution when he says the jobber may decide on introducing new methods for the sale of his goods.

Boston, Mass., May 8, 1911.

Editor "Domestic Engineering":—Yes, it is an absorbingly interesting question—"How Can a Legitimate Jobber Make a Legitimate Profit?"—which your correspondent "Anon" suggests for discussion in your issue of April 15th. Tersely, it might be answered: "By making it," or, "He can't do it."

Success in business can be attained, even if a business is mismanaged, provided the profits are large enough to take care of the leaks and losses which mismanagement cause, but when the so-called profits of a business are less than sufficient to cover the expense of doing business then "comes the rub," and legitimate methods are in jeopardy, or it becomes necessary to resort to illegitimate ways and means. The constant seeking for increased volume of sales, the awful ignorance of many jobbers as to their costs, the willingness of many jobbers to sell any kind of trash, simply to beat a competitor's price, the average plumber's demand for lower and still lower prices and his disregard for quality, the unwillingness of the average plumber to pay fair, living prices to honest legitimate jobbers, have all contributed to the profitless condition of the jobbers. Thus we are brought face to face with several alternatives:

First—The jobber may decide to maintain his prices and quality and thus suffer a great loss of sales and have consequent ruin threaten him.

Second—To hold his trade he may decide to cut his prices and maintain quality and take orders at prices made by some of his "wiser" or "smarter" competitors, and at the end of the year find he has not made a penny, or he may have lost money.

Third—He may decide to reduce the quality of goods and meet prices, thus making up by saving on his costs.

Fourth—He may decide to reduce prices, but compensate for loss of profits by increasing his volume of business, thus becoming a menace to all his competitors; for it is well known that the merchant who seeks business on low prices spreads chaos and ruination in every field he travels.

There is a cure, if there is a jobber strong enough, mentally, physically and financially, to undertake its application:

First—The cost of goods is the net cost plus such percentage as it costs to conduct and maintain the business establishment.

Second—Sell goods at this cost-price plus a fair percentage for "real profit."

Third—If the jobber cannot sell his goods to the plumbers at a price based on the above honest and fair method of determining cost, it will be necessary for him to use his brains and decide some sane and safe way of disposing of his wares.

He may decide on inaugurating new methods for the sale of his goods, and it seems to me that the next evolution will be the development of such new methods of selling plumbing goods. What these methods will be I cannot say, but they are "on the wing," and unless the plumbers manifest a greater willingness to pay a fair, legitimate price to legitimate jobbers, for good, legitimate goods, the day of the "new way" is not far off.

Mr. S. H. Morgan of Detroit, in his admirable and able address on "The Cost of the Plumbing Business," has demonstrated that it does actually cost something to conduct a plumbing business, and that if a plumber wants to get a profit he must add the cost of doing business to the net cost of work, and then add some to that for "real profit."

Mr. Morgan is absolutely right, and the plumbers would be a prosperous lot of business men if they followed his advice and were guided by his truthful figures. But why don't they? And also, why don't the jobbers take the same advice and make prices accordingly? Who can answer? Perhaps those plumbers who appreciate what Mr. Morgan says, and who will adopt his proper method of doing business, may cheerfully and gladly pay the same fair prices for goods as they expect to receive. So let us pray that Mr. Morgan's figures may become more widely understood and his methods put into practice by the plumbers, and that they will place their orders even as they would receive theirs—at a profit.

More later—perhaps!

O. J. Saxe.

Coming down to business the other morning, I heard one high-school girl say to another: "I wonder what would happen if everybody in this world was given a dollar apiece to start business on, and there was no more money in the world?" I didn't dare to follow them along to find out what the answer was. I might have been suspected of anything but legitimate motives. The question, however, affords food for thought. We do know that before the first week was up there would be many who didn't have the dollar.

The legitimate jobber who complains that he cannot make a legitimate profit, after having exhausted all the apparently normal methods of making it, would do well to consult a business-doctor, who will subject his business to a strict examination and find out its points of weakness. Many manufacturing concerns successful today did so when on the verge of bankruptcy. These investigators either showed serious leaks in business management, or devised new methods of disposing of the products.

There is one thing that the public will always buy if it is offered to them at sale, and that is salespersonality. It fastens itself on to the goods. It makes the common-place article acquire a superlative value. People who endeavor to sell products as common products, will only get common prices. For illustration by concrete example: Some time ago we went out to buy an oriental carpet. We knew what store we were going to buy it in. We had confidence in that store through its advertising and its display-windows. We were determined to invest our money in that store. You could not find conditions more favorable for the effecting of the sale of that carpet. We firmly believed that that store sold better goods in greater variety than any other. In commencing the transaction and mentioning the price at which we thought we could find the article, the salesman immediately raised his nose to high heaven in disdain at our ignorance. He practically assured us that it was a waste of his valuable time to attempt, even, to show us any goods. We were at least $75 below his lowest point at beginning. As we did not want to waste his valuable time, we left.

In the next store we went to, the salesman told us we would have to pay more to get the kind of article that we desired, but he would show us what we could buy at the figure we had set. Then he contrasted carpet with carpet, and explained what made the difference in price, and what special qualities the carpets possessed at these prices. We finally spent with him $50 more than the lowest figure the other man had set. We were satisfied and are still satisfied. The man had sales-personality. His wares had attached to them a valuation which could not be expressed in the dimensions of the carpet. We have no doubt that the other carpets were just as good as his, but they were not shown to be so by the salesman. We were buying sales-values, as well as carpets.

The legitimate jobber has perhaps overlooked this important fact, that a bath-tub to a customer represents more than certain dimensions and so many pounds of ware. The bath-tub could be sold better and to greater profit if it carried with the sale a garantee of service, a garantee of durability, suitability of size to the conditions of the customer, and attractive appearance.

The legitimate jobber could get a legitimate profit if he would use legitimate means to do so. If he attempts to sell goods by assuming the attitude of a cigar-store Indian, he will fail miserably. He must follow the same line in getting business as is followed by legitimate manufacturers and merchandising concerns. These are open to every one. Attractive advertising, periodic display of his specialties, well-written letters to his prospective customers, a careful attention to follow-up business, educative folders on the special advantages of the products he handles, co-operative suggestions for the development of the business of those with whom he deals—these and many other details will assist him to build up a business which is profitable along legitimate lines.

We would like to receive other letters on this subject from legitimate jobbers who are making a legitimate profit. They will raise the jobbing-business to a higher standard, and if the jobbing-business is raised, that of the manufacturer and retailer will reap a corresponding benefit.

The Sanitary Plumbing & Heating Co., Huntington, Ind., has been incorporated with the following directors: Frank Martin, M. E. Howenstine and H. E. Rosebrough. The capital stock is announced as $6,000.

The Third Annual Meeting of the National District Heating Association

Held at Pittsburgh, Pa., June 6, 7 and 8, 1911

Delegates to the third annual convention of the National District Heating Association started to arrive at the Fort Pitt Hotel, Pittsburgh, Pa., on Monday, June 5th, and by noon Tuesday 75 members had signed the register. It was announced at that time by A. C. Rogers, chairman of the Executive Committee, that the conclave would be by far the most interesting and instructive the association ever fathered.

Tuesday morning was spent in getting acquainted and renewing pleasant memories of former conventions.

"Now boys," said Secretary Gaskill as a crowd gathered about him in Room 138, the headquarters, "we will have a theater party tonight and you chaps want to make your reservations early." This as he held up a handful of reserved tickets for the Grand Opera House. There were no tickets left when it came time to "hike" to the show.

The Pittsburgh Entertainment Committee was composed of the following:

Geo. R. Folds, chairman, R. S. Orr, J. M. Graves, W. A. Donkin, C. P. Hill, W. D. Shaler, Cadwallder Evans, jr., John Hyde, H. G. Glass, J. C. McQuiston, J. O. Little, W. B. Wilkinson, J. D. Hiles, G. W. Provost, John Klingelhofer, E. B. Tyler, Ray Goss.

At noon Tuesday a party of delegates boarded a special trolley car and went to the H. J. Heinz home of the "57 varieties," when this mammoth plant was inspected. This was followed by a lunch at the same plant, after which the delegates returned to the Fort Pitt.

The convention started shortly after 2 p. m. in the English room, the south end being devoted to convention purposes, the north end to exhibits. Nearly all delegates who had registered up to noon Tuesday were in their seats when Pres. George W. Wright, of Baltimore, dropped the gavel, calling the convention to order.

President's Address.

In addressing the members, President Wright said:

We open this, the third annual convention of the National District Heating Association, in one of the largest and most progressive cities in this great country, and where unusual opportunities are afforded engineers for the inspection of the best methods of manufacturing, and the operation and management of large business enterprises. The second annual convention, held in the city of Toledo, O., June 1, 2 and 3, 1910, was a very successful one in all respects, and a very pleasant memory it no doubt is to those who were fortunate enough to attend and partake of the hospitality of the Ohio members and the citizens of Toledo, but it is my confident belief that when this convention shall have passed your verdict upon it will be that it was even more satisfactory and helpful than any of its predecessors, as it should be with a much larger attendance and a more diversified membership.

The field of central station engineering is widening from day to day, and the heating engineer, like all others, is almost daily confronted with new problems. To solve them it is not only desirable but absolutely necessary that all members of this association shall work in harmony and hearty co-operation. Questions of insulation, construction, distribution, rates, station operation, meters and others are demanding our best efforts. We owe a debt of gratitude to the men who have furnished us with the large volume of data that has already been compiled on these subjects, particularly when we consider that the obtainment of it usually involves the expenditure of such a great amount of both time and money. Although much has been done by these men, there yet remains much to be done, and to each one of us the opportunity is open to add to this store of knowledge. It is natural for the heating engineer to look to this body for information, and it is indeed fortunate that we have in our membership so many men well qualified to speak with authority on all matters pertaining to our field of engineering.

The engineer obtains his knowledge of his art mostly from experience and experiments, which are transmitted from man to man, and finally recorded in permanent form in books or the proceedings of associations such as this. The data thus secured, if carefully kept and published, are made available for analysis and correction by scientific methods, and thus rendered useful to the engineer, who, without the knowledge so gained, would be almost helpless. When following in the footsteps of others along the beaten paths of progress we feel secure, but when we stray therefrom we are very much like the pioneer in the forest primeval. We may take much pride in our knowledge, but when we approach the unsolved problems we are brought to a realization of our actual ignorance, and our established theories and scientific knowledge in other fields lends us but little aid in our dilemma. "Theory is simply guessing; science is to know." But even science is limited to known or accepted facts and the discovery of new facts by means of investigation or experiment may change our science, establish new truths, and upset some of the old schools or formulas. Therefore, it is necessary and requisite for advancement in the engineering profession that the engineer shall be studious, impartial, a searcher for the truth, and always ready to impart the results of his investigations to his fellows, and to give due consideration to the work of others.

"Good engineering practice" is a term frequently made use of, but what is its definition? Owing to the limits of human knowledge it may be only the practice of ordinary skill, but, such as it is, it is about all we have to follow where there is nothing else to guide. We should, therefore, keep ourselves posted on the highest state of the profession in which we are engaged, and, if possible, start where other successful men have finished. Most engineers have their scrap heaps, which serve to keep their conceit within bounds, and if we have the opportunity it would be well for us to look their exhibits over, as it may inspire us to do better work than the owners of the junk piles. Success often comes after many failures, but it is best to avoid the failures if we can.

There has been secured for presentation at the several sessions of this convention a large number of most excellent papers dealing with the practical side of heating-plant operation, for which our thanks are due to the gentlemen who have so kindly given of their time and ability in their preparation. I hope that you will give these papers careful attention and free discussion, so that the full value of each may be brought out, and that no member will hesitate to ask for information on any point that may appear obscure to him.

Upon assuming the duties of president of this associa-

tion at Toledo, I asked the earnest and hearty co-operation of all of its members towards its advancement in numerical strength and professional influence, and I am pleased to state that this has been given me. While the increase in membership is not as large as I then hoped it might become by the date of this convention, it is, nevertheless quite substantial and indicative of its spreading fame, and there is every reason to believe that there will be further fruition during the coming fiscal year from the seed that has been sown.

With the assistance of the secretary, and Messrs. Bishop, Schott, Gifford and others, a very complete list of all central station heating companies in this country and Canada has been compiled, each one communicated with and given an opportunity to become a member of this association. As a further step in the canvass for members, on Aug. 24, 1910, I appointed the following Membership Committee:

Warren Partridge, Springfield, Ill.; Thomas Donahue, Lafayette, Ind.; L. R. Crawford, Sioux City, Ia.; Geo. D. Higgins, Detroit, Mich.; R. E. Richardson, Kansas City, Kan.; R. D. DeWolf, Rochester, N. Y.; W. A. Wolls, Columbus, O.; E. J. Keifer, Easton, Pa.; DeWitt C. West, Beaver Dam, Wis.

The appointees were selected from the states having the larger number of heating companies, and they were urged to give some of their time to the canvass for membership. Judging from the results it would appear that this committee, as a whole, did not have the time to devote to this work, and some other plan for getting into close touch with the managers and other officers of heating companies should receive the careful consideration of the association.

Several of our associate members have representatives who are constantly traveling and meeting these gentlemen, and it is possible that they would be more successful in securing their applications.

Some of these associates have already been active in this connection, and no doubt are responsible for some of the applications that have been received, and I regret that, in the absence of direct information, I cannot here accord them credit for their efforts more particularly. I feel it to be my duty, however, to give E. J. Kiefer, of Easton, Pa., and Warren Partridge, of Springfield, Ill., credit for faithful and efficient work in their states, and there may be others to whom similar credit is due of which I am not advised. Through personal letters to several companies your president has secured several members, the secretary has gotten a great many more, but there is much yet to be done, a large field for work.

I appointed the Executive Committee as the Program Committee, as the former committee had already given this matter much consideration and were to hold a meeting in this city Nov. 17 and 18, 1910, which meeting was held and the proceedings of which will be reported by the secretary.

The Committee on Revision of the Constitution has prepared a report, which will be submitted for your consideration at the morning session, Thursday, and copies distributed for reference. When the new constitution is finally adopted I recommend that it be printed in pamphlet form, pocket size, and that a list of the active and associate members be added thereto.

Delegates Attending the Third Annual Convention of the National District Heating Association, Held at Pittsburgh June 6, 7 and 8, 1911.

—Photo by the R. W. Johnston Studios, Inc., Pittsburgh.

This association has now grown to such proportions that the consideration of the adoption of an official emblem seems to me to be advisable. A lapel button or pin, with this emblem thereon, would serve as a distinctive badge of membership and meet with a ready sale.

It affords me much pleasure to testify to the active and most earnest efforts of our secretary-treasurer for the extension of the membership of the association, and to his hearty co-operation in all matters relating to its management and conduct.

At the meeting of the Executive Committee, in the city of Pittsburgh, Pa., Nov. 17 and 18, 1910, arrangements for this convention were considered and decided upon. It was decided to ask for reports from the Committee on Meters and from the Committee on Radiation, and that a Committee on Data be appointed by the president, which would also be requested to prepare a report for this convention. I appointed as the Committee on Data E. J. Keifer, Easton, Pa., A. C. Spencer, Detroit, Mich., and Warren Partridge, Springfield, Ill.

E. J. Keifer, Easton, Pa., and A. C. Rogers, Toledo, O., having asked to be relieved from service on the Committee on Radiation, they were so relieved and the committee

left to consist of W. K. Martin, Crawfordsville, Ind., Geo. D. Bly, Toronto, Canada, and Geo. D. Higgins, Detroit, Mich.

The selection of the place of meeting of this convention was also decided by the Executive Committee, and after hearing the committees from several business organizations and enterprises of the city of Pittsburgh, Pa., it was unanimously decided that the meeting should be held in this city, and the date set in accordance with the sentiment of the members as expressed at the Toledo convention.

That no mistake was made in this selection is evidenced by the large attendance at this opening session, and I feel extremely confident that the gentlemen of Pittsburgh who have so kindly volunteered to give us of their valuable time by serving on the Entertainment Committee will render our stay a delightful memory.

An able address of welcome was made by Attorney H. M. Irons, who represented Mayor W. A. Magee, who was unable to attend the meeting because of an extreme amount of municipal business needing his attention.

Robert Garland, vice-president of the Chamber of Commerce, which body asked the convention to meet in Pittsburgh, followed Mr. Irons. Mr. Garland told of the selection of nine members of the Chamber that day as the new council of the city, and of the causes which led up to the ousting of all old councilmen from office. "We're just waiting for that new business life, just as you are," said Mr. Garland, "and when that does come, Pittsburgh will 'come back' like all other business lines." Both speakers were warmly applauded.

After making announcements, Secretary-Treasurer Gaskill presented his annual report which showed receipts of $2,482.24. He stated that the year had been marked by progress, increased interest and splendid enthusiasm.

A vote of thanks was given the secretary for his able report.

The following list of new members, favorably acted upon by the Executive Committee, was voted into the association:

New Members.

Evans, Almirall & Co., Chicago; Otto E. Osthoff, H. M. Byllesby & Co., Chicago; Michigan Power Co., Lansing, Mich.; Merchants' Light, Heat & Power Co., San Francisco; Harrisburg Steam-Heat & Power Co., Harrisburg, Pa.; Tuscarawas Co. Electric Light, Heat & Power Co., New Philadelphia, O.; Ernst Schiele, Hamburg, Germany; York Steam Heating Co., York, Pa.; Erie Co., Erie, Pa.; Edison Electric Illuminating Co., West Chester, Pa.; Dunkirk Power & Heating Co. Dunkirk, N. Y.; Andrews Heating Co., Minneapolis; Waukesha Gas & Electric Co., Waukesha, Wis.; Cheyenne Light, Fuel & Power Co., Cheyenne, Wyo.; Grinnell Electric & Heating Co., Grinnell, Ia.; Missoula Light & Water Co., Missoula, Mont.; Murry J. Marvin, Wilberforce, O.; Penn. Central Light & Power Co., Altoona, Pa.; DeKalb-Sycamore Electric Co., DeKalb, Ill.; Hazelton Steam Heating Co., Hazelton, Pa.; Norristown Steam-Heat Co., Norristown, Pa.; Georgia Railway & Electric Co., Atlanta, Ga.; Denver Gas & Electric Light Co., Denver, Colo.; North Shore Electric Co., Chicago; Albert Lea Light & Power Co., Albert Lea, Minn.; Taylorsville Gas & Electric Co., Taylorsville, Ill.; E. J. Bechtol, Detroit, Mich.; Davenport Gas & Electric Co., Davenport, Ia.; Frankfort Heating Co., Frankfort, Ind.; Washington Electric Light & Power Co., Washington, Pa.; E. B. Tyler, Wilkinsburg, Pa.; Merchants' Heat & Light Co., Indianapolis, Ind.; Yakima Artificial Ice & Cold Storage Co., North Yakima, Wash.; F. C. Chambers, Springfield Light, Heat & Power Co., Springfield, Ill.; F. Beaurrienne, Paris, France; Red River Power Co., Grand Forks, N. D.; Edison Electric Illuminating Co., Cumberland, Md.; Central New York Gas & Electric Co., Geneva, N. Y.; Federal Engineering Co., Pittsburgh; Estate of Henry W. Oliver, Pittsburgh; Edwin Ehinger & Co., Toledo; Canton Gas & Electric Co., Canton, Ill.; Northern Heating & Electric Co., St. Paul; Kenosha Gas & Electric Co., Kenosha, Wis.; D. A. Bonitz & Co., Chicago; E. F. Capron, Chicago; F. M. Sinsabaugh, Mt. Vernon, Ill.; Frank K. Chew, New York; D. L. Gaskill, Greenville, O.; Miami University Light Plant, Oxford, O.; City Light, Heat & Power Co., Pittsburgh.

Associate Members.

"Electrical World," New York; Westinghouse Machine Co., East Pittsburgh; Jenkins Bros., Farnham Yardley, vice-president, New York; Richards-Wilson Pipe Covering Co., Grand Rapids, Mich.; H. W. Johns-Manville Co., Pittsburgh; National Valve & Mfg. Co., Pittsburgh; J. C. McQuiston, Westinghouse Dept. of Publicity, East Pittsburgh; Builders' Iron Foundry, Providence, R. I.; "Power," New York; Powers Regulator Co., Chicago; Power Specialty Co., New York.

The report on "Data" was read by A. D. Spencer, of Detroit, Mich. This report will not be published until the next convention, when important additions are to be made.

The Committee on Data was continued, but the personnel is subject to the incoming president. This committee is also requested to present at the next convention a series of forms for use of the association.

J. Byers Holbrook, New York City, who was to have read a paper on "The Heating and Ventilating Equipments of the City Investing Building, New York," was called to Canada and was unable to attend the convention. His paper, which was to have been read Thursday, was brought forward to the Tuesday session, and was read by Secretary Gaskill. A vote of thanks was extended Mr. Holbrook for his able paper.

"Handling Customers" was the theme of a paper read by Pres. George W. Wright.

In his comprehensive paper President Wright brought out first the necessity of keeping customers satisfied, in order to retain them. There is so much difference between central-station service and that from isolated plants, that instruction is indispensable, as without proper regulation the customer is likely to waste heat and then be surprised at the size of the bills. He advised giving each customer a pamphlet explanatory of the principles and management of central-station service, with instructions for reading the meter. He believes it a good plan to print on the back of the monthly statements suggestions for avoiding loss of heat, specifying the covering of pipes, closing of doors and windows, installation of temperature controllers, etc. He warned managers against making estimates for new customers, and advised letting the customer make his own estimate by comparison of his requirements with the service and cost in other buildings. In this way disappointment will be avoided. All complaints should be given prompt and careful attention. This quotation will apply to all trades and merchants. "The longer a customer is allowed to brood over his grievance, the more difficult it becomes to placate him. Prompt attention shows a desire to please, which is usually appreciated." Managers should keep accurate records of daily temperatures, which are often forgotten by the customer when the bills are presented. In many cases, where large

amounts of steam are used, daily readings of the meters have proved advisable, the saving to the company in disputed cases more than covering the cost of the extra work. Mr. Wright dwelt at some length on the many causes for loss of revenue, advising as one remedy a permanent record of conditions in each building, for purposes of comparison. He also warned managers of the dangers of hidden leaks.

Following a brief discussion upon this suggestive and valuable paper, the convention adjourned until Wednesday morning.

In the evening practically all delegates attended the show at the Grand Opera House on Fifth avenue. This was a courtesy extended by the Entertainment Committee.

It had been planned that a party should visit the plant of the National Tube Co. at McKeesport, Pa., Tuesday night, but this arrangement was changed because of the danger visitors would be subjected to in making a night visit. Instead, the National Tube Co. asked the convention to remain over until Friday morning, when the company would provide a special train on the Baltimore & Ohio Railroad to carry the visitors to the plant, and would also entertain them at lunch. This change was perfectly satisfactory and was accepted.

Wednesday Morning Session.

There was no loss of time in getting down to business Wednesday morning, and promptly at 9 a. m. the convention was called to order. There was an increase in the number of delegates over Tuesday night, and nearly 100 were present at the opening of the session.

"Heating Franchises," a paper prepared by Geo. W. Wright, Baltimore; D. L. Gaskill, Greenville, O., and Grant Miller, Toledo, O., was the first paper read, and was in charge of W. H. Schott, Chicago.

A round of applause greeted Prof. J. R. Allen, M. E., of the University of Michigan, Ann Arbor, Mich. His theme was "Coëfficients of Heat Transmission." Mr. Allen summed up his paper, not reading it, but explaining his work from different phases.

A vote of thanks was extended to the writers of these two papers.

"Results of Measuring Station Load with Venturi and General Electric Meters" was the subject of a paper read by F. C. Chambers, of the Springfield Light, Heat & Power Co., Springfield, Ill.

Following the reading of this paper the convention adjourned until Thursday morning at 9 a. m.

Wednesday Afternoon.

At 1:05 p. m. Wednesday afternoon the Westinghouse Electric & Manufacturing Co. provided special Pullman cars for the convenience of delegates to go to this plant at East Pittsburgh. Nearly all registered delegates availed themselves of this trip. Special guides were provided and the trip through the mammoth plant was thoroughly enjoyed.

Upon the return to the city all delegates were told that the Pittsburgh Natatorium wanted the "crowd" to take a bath, and the convention badge was enough to garantee a swim of several hours. This little diversion was a most enjoyable one, and many visitors were in "the swim."

Thursday Morning Session.

At the opening of the third session of the convention on Thursday morning, the first business was the report of the Committee on Revision of the Constitution, composed of D. L. Gaskill, Geo. W. Wright and Grant Miller. Several amendments and eliminations were recommended by the committee, the most important being the adding to the Executive Committee of two active members, to be elected annually, and granting the privileges of the floor, at the discretion of the presiding officer, to non-members of the association introduced by members. After consideration these changes were accepted and the constitution as amended was adopted.

The souvenir program for 1911 will be discontinued. It has proved difficult to get sufficient advertising to make its publication profitable, and it is believed that if the same amount of effort were used in the campaign for membership, the result would have more permanent value.

Election of Officers.

Next in order was the election of officers, which resulted as follows:

President, A. D. Spencer, Detroit, Mich.; first vice-president, Warren Partridge, Springfield, Ill.; second vice-president, R. D. De Wolf, Rochester, N. Y.; third vice-president, Cadwallder Evans, jr., Pittsburgh; secretary-treasurer, D L. Gaskill, Greenville, O. Executive Committee: The officers and E. J. Keifer, Easton, Pa.; J. L. Hecht, Chicago.

George W. Wright,
The Retiring President.

D. L. Gaskill,
The Re-Elected Secretary.

R. D. De Wolf, of the Rochester Railway & Light Co., Rochester, N. Y., then read his paper on "The Preparation of a Rational Rate System," and W. E. Dowd, jr., manager of the Power Specialty Co., Philadelphia, presented his paper on "Superheated Steam." These papers were much appreciated and were followed by discussions.

Thursday Afternoon Session.

At the closing session of the convention the report of the Committee on Radiation was received and after discussion was accepted. Walter J. Kline, of the American District Steam Co., Lockport, N. Y., had for the subject of his paper "Best Systems of Radiation for Economy and Steam Consumption when Fed from a District Heating Station." He was followed by A. C. Rogers, of the Toledo Railway & Light Co., Toledo, O., who discussed the same topic from the standpoint of hot-water heating.

The convention thereupon adjourned sine die.

Automobile Trip for the Ladies.

About 15 ladies attended the convention and Wednesday morning they were given a very pleasant automobile ride through Highland and Schenley Parks, as guests of the Pittsburgh Entertainment Committee.

A reception was given upon the roof of the Henry W. Oliver building on Wednesday evening, which was a great success. Music was furnished by a quartet and a string band, and refreshments were served. Nearly two hundred guests were present, including many ladies.

Delegates in Attendance.

Chicago: J. F. Hecht. W. H. Schott. E. L. Barnes. M. O. Payne. Peoria, Ill.: H. W. Witherell. Springfield, Ill.: Warren Partridge. F. C. Chambers.

Baltimore, Md.: George W. Wright. Cumberland, Md: W. M. Roberts.

New York City: Joseph Graham. F. R. Low. James A. Donnelly. C. C. Staten. Frank K. Chew. A. S. Armagnac. O. F. Caldwell. Buffalo: E. M. Bendure. Lockport, N. Y.: Chas. R. Bishop. John D. Walsh. W. J. Kline. Robert Hall. Schenectady, N. Y.: G. S. Morris. Rochester, N. Y.: R. D. De Wolf.

Providence, R. I.: C. G. Richardson. Kansas City, Mo.: A. E. Bettis.

Boston, Mass.: D. S. Boyden. Somerville, Mass.: Edward Gliner.

Seattle, Wash.: W. J. Gramps. G. E. Quinlan.

Ann Arbor, Mich.: John R. Allen. Bay City, Mich.: Henry B. Smith. Detroit, Mich.: J. W. Redfield. P. J. Morrissey. A. D. Spencer. J. A. Bordley. Geo. D. Higgins. Lansing, Mich.: A. H. Lamond.

Terre Haute, Ind.: Harvey E. Smith. Birmingham, Ala.: T. B. Dunlop.

Cleveland, O.: C. L. Strong. J. C. Murdock. L. D. West. Columbus, O.: W. A. Wolls. East Liverpool, O.: M. K. Zimerman. Dayton, O.: C. H. Spiehler. Greenville, O.: D. L. Gaskill. Toledo, O.: A. C. Rogers. Grant Miller.

Easton, Pa.: E. J. Keifer. Erie, Pa.: Paul Mueller. Harrisburg, Pa.: Henry Jennings. H. B. Law. L. A. Cramer. Johnstown, Pa.: J. W. Reeves.

East Pittsburgh, Pa.: Edwin J. Dreyfus. Hazelton, Pa.: S. C. Garner. J. S. Wise, jr. F. H. Dimock. Philadelphia: W. E. Dowd, jr.

Pittsburgh: E. B. Tyler. William A. Donkin. J. C. McQuiston. John Hyde. John Klingelhofer. E. E. Gauss. George W. Provost. C. P. Hill. Geo. H. Criss. J. W. Rudin. Thomas H. White. S. A. Fletcher. George Hartman. Daniel L. Diedrich. P. W. Butler. W. C. Craig. W. D. Shaler. Caldwalder Evans, jr. W. B. Wilkinson. J. D. Hiles. E. M. Deeher. E. H. Eggleston, jr. Van A. Reed, jr. L. C. Frobrieb. J. T. Bulkley. Harry G. Glass. E. A. Knowlton. A. F. Strouse. Robert G. Stewart. Charles T. Klingelhofer. J. J. Kennedy. Lee Phillips. R. S. Edwards. R. M. Fisk. D. Hunter.

Duluth, Minn.—The Archie McDoughall Plumbing Co. has moved to larger and more convenient quarters at 214 E. Superior St., much improving its facilities for handling its increasing business.

Los Angeles, Cal.—The Automatic Ventilating Co. has been incorporated with a capital stock of $75,000 by L. O. Matthews, J. K. Pennington, M. A. Pennington, N. L. Harden and O. R. Harden.

Ashland, Ore.—A new high school structure is to be erected and bids are being invited for the installation of the heating and ventilating plant.

Oakland, Cal.—The Oakland Gas, Light & Heat Co. has commenced the laying of pipes in the downtown district for the purpose of supplying customers with steam and hot-water for heating purposes. A very comprehensive system is being planned and the work of installation will take at least a year's time.

ANNUAL MEETING OF THE MASSACHUSETTS ASSOCIATION OF PLUMBING INSPECTORS.

(Special Telegram.)

At the annual meeting of the Massachusetts Association of Plumbing Inspectors, held in Worcester, Mass., on June 7th, it was decided to make the organization more comprehensive, and the name was changed to the New England Association of Plumbing Inspectors. Officers were elected for the ensuing year as follows: President. O. J. Cullington, Lawrence, Mass.; vice-presidents, H. H. Wilcox, Taunton, Mass., and R. S. Bemis, Providence, R. I.; secretary, E. G. Bates, Springfield, Mass.; treasurer, J. H. Mulloney, Boston, Mass.

OHIO HAS A NEW BUILDING CODE.

With the signature of Governor Harmon, amended House Bill No. 479, establishing a building code regulating the construction, repair, alterations and additions to public buildings and other buildings of the state, becomes a law. The bill, which is quite voluminous, requires the state fire-marshal, the chief inspector of workshops and factories, and the state board of health to see that its provisions are enforced.

According to the ruling of Attorney-General T. H. Hogan, the new code does not apply in municipalities where there is in force a building code recognized as containing provisions sufficiently stringent for all practical purposes.

Relative to the construction of theaters, the bill provides that furnaces, hot-water heating boilers and low-pressure heating apparatus, breeching, fuel-room and firing-room must be enclosed in a standard fireproof heater room, and all openings in the same covered by standard self-closing fire-doors.

A heating system shall be installed which will uniformly heat all parts of the building to a temperature of 65 deg. The air in all parts shall be changed by a system of ventilation at least six times per hour. All assemblage halls and theater auditoriums shall be heated and ventilated by a system which will supply each auditor not less than 1,200 cu. ft. of air. The system to be installed shall either be a gravity or mechanical furnace system, gravity indirect steam or hot-water, or a mechanical indirect steam or hot-water system. The fresh air is to be taken from outside of the building and no vitiated air shall be reheated. No floor register for heating or ventilating shall be placed in any aisle or passageway.

Stringent regulations as to the system of plumbing to be used on both public and other buildings are provided. The code is said by experts to be one of the best in force in any state in the United States.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect James Knox Taylor, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., June 28, 1911, for the construction complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring and lighting fixtures, of the U. S. post-office at Suffolk, Va.

Until 3 p. m., July 5, 1911, for the construction, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, and lighting fixtures, of the U. S. postoffice and court house at Washington, N. C.

Until 3 p. m., July 10, 1911, for the extension, etc., including plumbing, gas-piping, heating apparatus, electric conduits and wiring system, of the U. S. postoffice and custom house at Ellsworth, Me.

Until 3 p. m., July 12, 1911, for the construction complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, and lighting fixtures, of the U. S. postoffice at Milford, Mass.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites or from the office of the Supervising Architect at Washington, D. C.

THE GALVESTON CONVENTION COMET

The Galveston Convention Comet has now reached its zenith. This is your last chance to look at it, unless you have already planned to take our advice and view it in all its splendor on June 13, 14 and 15, as it hovers over Galveston, invisible to those who have neglected our invitation to visit the astronomical state where the hosts are gathering from all directions. Will you be there too?

June 13, 14 and 15, 1911.—The 29th annual convention of the National Association of Master Plumbers of the United States, at Galveston, Tex., with headquarters at the Tremont Hotel. The officers of the association are: President, A. Selden Walker, East Orange, N. J., vice-president, Alfred C. Eynon, Canton, O.; secretary, Samuel F. Wilson, East Orange, N. J.; treasurer, Wm. McCoach, Philadelphia, Pa.

June 22, 1911.—The annual mid-summer meeting of the Eastern Supply Association, in Atlantic City, N. J. Headquarters will be established at the Chalfonte Hotel. The officers of the association are: President, P. M. Beecher, Syracuse, N. Y.; first vice-president, J. A. Murray, New York City; second vice-president, F. H. Locke, Boston; treasurer, Martin Behrer, New York City; secretary; Frank S. Hanley, 261 Broadway, New York City.

June 28, 1911.—Midsummer meeting of the Central Supply Association, at Detroit, Mich. The officers of the association are: President, Geo. H. Gorton, Kansas City, Mo.; first vice-president, Wm. Ivy, St. Louis, Mo.; second vice-president, P. J. Frey, Minneapolis, Minn.; treasurer, Edw. F. Niedecken, Milwaukee, Wis.; secretary, Paul Blatchford, 1524 Tribune Bldg., Chicago.

July 6, 7 and 8, 1911.—Annual summer meeting of the American Society of Heating and Ventilating Engineers, in Chicago. The officers of the society are: President, R. P. Bolton, New York City; first vice-president, Prof. John R. Allen, Ann Arbor, Mich.; second vice-president, A. B. Franklin, Boston; secretary, W. W. Macon, 29 West 39th St., New York City.

CINCINNATI DELEGATES TO GALVESTON.

The Cincinnati Master Plumbers' Association has elected the following members to represent it at the Galveston convention: E. H. Morgan, Ray J. Hillenbrand, A. J. Murphy, J. J. Vogelpohl, J. B. Laumann, J. H. Brinck and George Mellor.

DELEGATES TO THE GALVESTON CONVENTION FROM PROVIDENCE, R. I.

The master plumbers' association of Providence, R. I., has selected the following delegates to represent it at the annual convention of the National Association of Master Plumbers at Galveston: C. P. Brennan, president; John F. Davey, Thomas E. Manney, Thomas J. Tierney, John J. Shanley and Preston R. Walker.

MISSISSIPPI MASTER PLUMBERS' STATE ASSOCIATION ELECTS OFFICERS.

At its annual convention, recently held in Columbus, the Mississippi State Association of Master Plumbers elected the following officers: President, S. A. Carnes, Laurel; vice-president, R. M. Nalty, Brookhaven; secretary and treasurer, R. W. Briggs, Meridian. The convention will be held next year in Vicksburg.

MAINE MASTER PLUMBERS' THIRD ANNUAL MEETING AND OUTING.

The third annual meeting and outing of the Master Plumbers' Association of the State of Maine will take place at Long Island, Portland Harbor, Me., on Monday, July 17, 1911. The committee intends to make it one of pleasure for all who attend and have arranged for a sail among the islands, with lunch on board steamer and music while enroute. At Long Island a shore dinner will be served and various games held that will make the event most enjoyable. All master plumbers in Maine are invited to attend, and those who plan to do so are requested to notify F. A. Davis, 153 Federal St., Portland, Me., before July 10, so that he can make the necessary arrangements with the caterer. The meeting will have its headquarters at the Falmouth Hotel, Portland, Me. The arrangement committee consists of F. A. Davis, chairman; P. A. Mahoney and Wm. J. Miller.

NEW YORK STATE NEWS.

The strike of the journeymen plumbers which was inaugurated at Lockport, N. Y., on May 1st, has been settled. The journeymen plumbers had been getting $3.00 per day of 8 hours and the improvers $2.00 for the same time. The demand was for $3.50 for plumbers and $2.50 for improvers per day of 8 hours, together with the Saturday half-holiday during the months of July and August with pay. The settlement was a compromise in which the employing plumbers agree to pay $3.25 per day to the journeymen and continue the present rate of $2.00 for the improvers. The Saturday-half-holiday during July and August is granted but without pay.

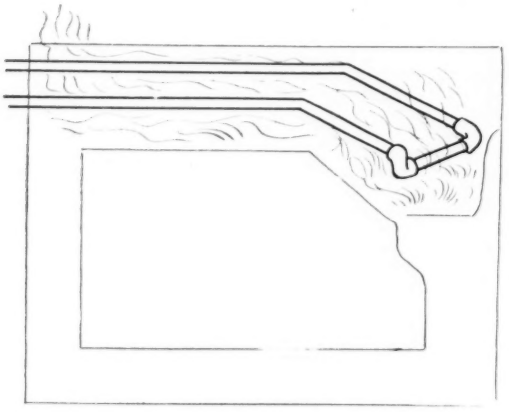
A bill has been introduced in the New York State legislature by Assemblyman Hammond which provides for an increase from $750,000 to $1,100,000, the maximum amount of bonds which may be used in the city of Syracuse for intercepting-sewer purposes.

Articles of incorporation have been filed by the National Gas Conveyor Co., of New York City, to manufacture appliances for lessening the cost of gas and electricity when used for either heat, light or power. The capital stock is $2,000,000 and the directors are Graham Smith, Fred'k G. C. Lyon and Henry S. Reynolds, all of New York City.

QUESTIONS AND ANSWERS

CHAMPIONS THE PIPE WATER-BACK.

Editor "Domestic Engineering":—I note in No. 7, "Domestic Engineering," May 13th issue, an inquiry from "More than Anxious" as to a pipe water-back and you advise against it. You are dead wrong. A pipe water-back in an old-style four-hole cook stove, such as is generally used by families, will heat more water and quicker than two end water-backs in any cast-iron or steel range ever made, of the six-hole, 18-in. or 20-in. oven-style. I not only heat all the water that is needed for a family of 12, but in addition heat two bathrooms 5x14x9 ft. high from an ordinary steel range, 18-in. oven, six 8-in. holes. The cast-iron water-front never gave any more than



A Pipe Water-Back.

enough domestic hot-water. We could not think of heating even one bathroom. There is no interference with the baking because the oven lining is undisturbed and the sides of the stove are not drilled. Two holes in the back of the stove, one on each side of the smoke-flue large enough to pass a ¾-in. pipe, are the only openings made in the stove anywhere.

The only fittings needed are two 1-in. nipple ells and two 1x¾-in. ells, or, if the fire-box is slanting, then two 1-in., 45-deg. ells instead of the reducing ells and bushings to ¾-in. The 1-in. horizontal pipe to be kept about ¾ in. away from the back wall of the fire-box to allow the fire to pass up between the back wall and the pipe.

Baltimore, Md. George J. Thaler.

PAINTING THE BATH-TUB.

Editor "Domestic Engineering":—I recently enameled a bath-tub and the job is no good. It looks thin and blue and will have to be done over again. Will you tell me how to go about it properly? T. B.

In the first place, you should have rubbed the tub down thoroughly with some medium sandpaper and the last time with finer sandpaper, after which the tub should have been wiped off well. Then the tub should have had at least three coats of good paint containing plenty of lead, and any streaking or irregularities rubbed down with a coarse cloth. After the last coat has set, thoroughly, you can apply the enamel and you will have a job that should look all right, and one that the first color on the tub will not show through.

CARRYING CAPACITY OF 4-IN. PIPE.

Editor "Domestic Engineering": The following may be of interest to "J. W." relative to the carrying capacities of 4-in. pipe under various conditions.

As I understand his proposition, he wishes to supply 4,800 sq. ft. of direct cast-iron radiation, and to place a reducing valve 152 ft. away from the boiler, and to carry 30-lb. to 40-lb. pressure up to the reducing-valve.

By D'Arcy's formula for the flow of steam through pipes and condensation in radiators figured at .3-lb. steam per hour, with 30-lb. gage-pressure at boiler, and main 152 ft. long, a 4-in. pipe will supply the following:

Pressure-drop:	1-lb.	¾-lb.	½-lb.	¼-lb.	⅛-lb.	1/16-lb.
Sq. ft.	9,931	8,590	7,021	4,965	3,515	2,483

With 40-lb. gage-pressure, the sq. ft. of radiation that can be carried will be considerably more than the amounts shown above, it being understood in both cases that no allowance has been made for elbows or entrance of steam to pipe at boiler, and the high pressure main to be covered and the condensation taken care of.

If the initial gage-pressure were cut to 5-lb., the following amounts could be carried:

Pressure-drop:	1-lb.	¾-lb.	½-lb.	¼-lb.	⅛-lb.	1/16-lb.
Sq. ft.	6,716	5,809	4,738	3,358	2,377	1,679

It must be borne in mind that considerably smaller sized pipes may be used in high-pressure work than in low-pressure, and practically all of the Tables of Steam Mains for supplying radiation are based on a 100-ft. length of main, and steam pressure at 5-lb. or 10-lb. or less. I will say for J. W.'s benefit that if he uses a 4x8 reducing valve, carrying 30-lb. pressure on the high-pressure side, and 1-lb. pressure on the reduced side, if he has 4,800 sq. ft. of direct radiation to supply and the water of condensation is taken care of by separate drips and returns, with ⅛-lb. pressure-drop on a main from 100 to 175 ft. long (understand this is on the low-pressure side of the reducing-valve) the following conditions will be found: A 6-in. pipe will supply 7,520 sq. ft.; a 7-in. pipe will supply 11,088 sq. ft.; an 8-in. pipe will supply 15,674 sq. ft.

The writer has compiled a series of tables on the flow of steam through pipes by D'Arcy's formula, from 1-lb. initial pressure to 120-lb. initial pressure, and with pressure drops of 1/16-lb., ⅛-lb., ¼-lb., ½-lb., ¾-lb., 1-lb., 2-lb., 3-lb., 4-lb., 5-lb., etc., and for lengths of pipes ranging from 10 ft. to 2,000 ft. The tables are theoretical, of course, but the writer has been using them in actual practice for a number of years and has found them to be not very far away from the right thing.

I should say that if J. W. uses a 4-in. main with 30-lb. gage-pressure up to the reducing-valve, and an 8-in. pipe inside the building, he will certainly be extravagant in pipe-sizes, but I should not like to specify the particular sizes to use, as his information is not explicit enough to do this intelligently.

Thomas Tait.

AMOUNT OF WATER HELD IN PIPES.

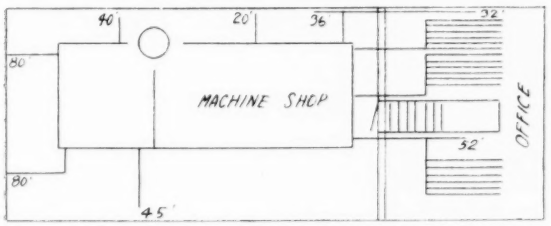
Editor "Domestic Engineering":—Can you tell me any easy manner by which one can ascertain the amount of water that would be held in a pipe of any size, and oblige,

A Reader.

It is stated that any pipe 3 ft. in length will have in it as many pounds of water as is the square of the pipe's diameter in inches. For example, a 3-in. pipe 3 ft. long would contain 3x3, or 9 lb. of water. If this rule is approximately correct, the 9 lb. would be somewhat in excess of one gallon, as the United States gallon weighs about 8⅓ lb.

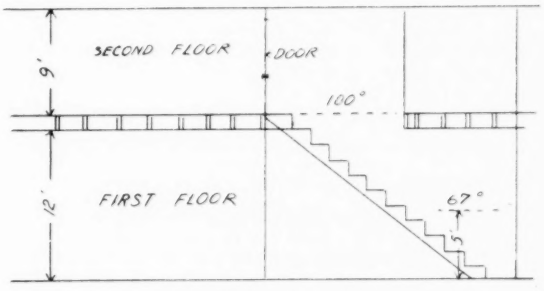
AN UNSATISFACTORY STEAM-HEATING SYSTEM.

Editor "Domestic Engineering":—Enclosed you will find two sketches showing elevation of building and pipe-plan of steam-heating plant installed in machine-shop, with office in rear and living-rooms above. There is no basement under building, boiler being placed in machine shop. Living-rooms are heated with cast-iron radiators, which give perfect satisfaction. There are three coils installed in office, suspended about 18 ft. from ceiling, containing 130 sq. ft. of heating surface, which do not give satisfaction.



Floor Plan of Machine Shop and Office.

One hundred sq. ft. of radiation is sufficient to heat room size of office, with same amount of glass and exposed wall. The trouble is that all heat accumulates at top of stairs, and will not circulate in office proper.



Cross Section of Building.

On the floor level at top of stairs thermometer registers 100 deg.; thermometer 5 ft. above first floor registers 67 deg., while temperature outside is 30 deg.

Is it possible to heat office to 70 deg. in zero weather without enclosing stairs?

Will be glad to have any advice you can give on above. Coils are properly vented. W. T. B.

We have looked over the sketches and with the data of your letter there seem to be three courses open to you to make the office heat. The first, and we believe the cheapest, would be to enclose the stairs as you have mentioned.

The second course would be to drop the coils and place them at the side of the room. In order to have them heat successfully by steam, it would then be necessary for you to make use of a return trap to make the coils work correctly.

The third way would be to drop the coils and tap the boiler below the water line and make the coils heat by hot-water, while the rest of the job works by steam.

At the same time, if you do not enclose the stairs, do not expect that the office is going to heat like the other rooms, for the chances are against it.

THE BALANCE OF THE AUTOMATIC REGULATOR.

Editor "Domestic Engineering":—How much steam had it ought to take to work the ordinary automatic regulator that comes with the ordinary steam boiler? "60."

If properly adjusted, we should say that the damper could be made to close on about a ½-lb. pressure, in the average number of cases, although we have seen several set that worked on less pressure than that. In case that there is a cold air check at the back also connected, which must be handled by means of chains run over pulleys, it might take a little more pressure than ½-lb. A little attention given to the arrangement of the pulleys so as to get the easiest working of the chain and one that will not get jammed, will make a great difference.

THE CHIMNEY AND THE BOILER.

Editor "Domestic Engineering":—Is there any direct proportion between the chimney and the boiler as to sizes? If so, will you let me have the figures? D. R.

There are some figures given in some of the books; but we believe that the following advice will be more to your own good. See that the chimney is free from all cracks, loose brick and is plastered on the inside (if you have the chance to boss its building).

As to the size of the chimney (sq. in. of area), it will not be safe to have less area in the chimney than the area is in the smoke-pipe of the boiler. We are aware that, in some cases, this has been done and that the job has, seemingly, worked all right. It will have worked more positively and with less fuel, though, had the chimney been of the proper size. Do not attempt to put 60 in. or 70 in of smoke-pipe area into about 40 in. of chimney area, for if you do, there is a mighty good chance that you will have some trouble. Follow the common-sense idea rather than lean on any tables in regard to this, and you ought not to go wrong.

WHAT PER CENT DO HEAT REGULATORS SAVE?

Editor "Domestic Engineering":—Can you tell me how much some of the patented heating regulators will save on a job? "Heating."

It is claimed, on general principles, that these regulators will save somewhere between 20 and 30 per cent of the amount of fuel. We would suggest that you write the manufacturers advertising in this paper and request them to give you the facts and figures, which you will find useful to have.

The Range Boiler and Connections

Uses, Abuses and Modifications

By Phoenix.

Chapter II.

As remarked in the previous installment, there is a chance that the hole in the tube, shown in the drawing by Fig. 24, might get stopped up. In such a case it might not be known until the very occasion when the action was required of it and then there might be trouble.

The chances for preventing the boiler's siphoning would be better if a vacuum-valve were used on the piping. The reason why these valves are not used to a greater extent is, I presume, that they are not fully understood. This valve should be placed at the highest point of the siphon. In case that the pipes in the drawing dropped from the top of the boiler, instead of rising to the ceiling, as shown, the vacuum-valve would be located at the point marked 12; in case the pipes followed the drawing at some point near 13. If you take a piece of pipe formed like the letter U and fill it full of water, then turn it upside down, should the sides of the pipe be of equal length, the water will stay in the pipe. Now punch a hole at the very top of the inverted pipe and the water will all run out. Take the true form of a siphon, with one side or leg longer than the other, and when in operation it will run until the water is drained out to the point at the end of the short leg; but if you punch a hole at the top of the siphon it will at once stop running.

This is the case with the action of the vacuum-valve on the supply-pipe to the boiler. It lets the air in on the highest point of the siphon and immediately the siphon's action stops, or, in other words, the emptying of the range-boiler ceases. The vacuum-valve works as follows: If an accident occurs and there is a leak on the supply-pipe to the range-boiler, the water will begin to siphon out. Just the moment that a vacuum is made on the inner side of the vacuum-valve the pressure of the atmosphere opens the valve, the air is admitted and the siphoning is stopped at once. The pressure of the water from the inside is what keeps the valve shut when its safety action is not required. Many times we all have observed check-valves on the supply-line to the boiler to prevent siphonage. There is no question but that it will do this, but its use is very objectionable for the reason that it is a direct impediment in the expansion of the water in the range-boiler, forming a condition in which an explosion could very easily take place.

It would be wise, therefore, to substitute the vacuum-valve for the check-valve and locate the vacuum-valve, point downward if possible, where it can dispose of any water in the sink, leaving off, in addition to the check-valve, the gate or globe-valves that are sometimes placed on the pipes.

In the drawing given, the cold water comes through pipe numbered 12, 12, 12 and enters the boiler through pipe 1, from which it passes through the pipe numbered 2, 3, 5 and 6 and enters the lower portion of the water-front. From this it passes through the pipe numbered 7, 8, 9 and 10 and is admitted to the side of the range-boiler, thus completing a swing around the circuit in the course of which it has taken heat from the water-front. The hottest of the water will be found at the top of the range-boiler. The ease with which the range-boiler heats does not depend upon the size of the water-front nor the boiler itself, but does depend upon the proper size of the connecting pipes, their being kept open to the full size, and also that the easiest course be made for the passage of the water. That statement takes for granted that there shall be no traps on the line and that all square corners or right-angle turns shall be done away with.

The Figs. 19 and 20 represent union couplings which can be used at this point, making it very easy to remove the water-front when it becomes stopped up with deposits. I have noticed that the point at 7 always seems to stop up first, and when called upon to look over a job that does not work right this is a good point to begin. In making the coupling with the unions, it is well to use gaskets made of lead, as sometimes the rubber gaskets do not last very long.

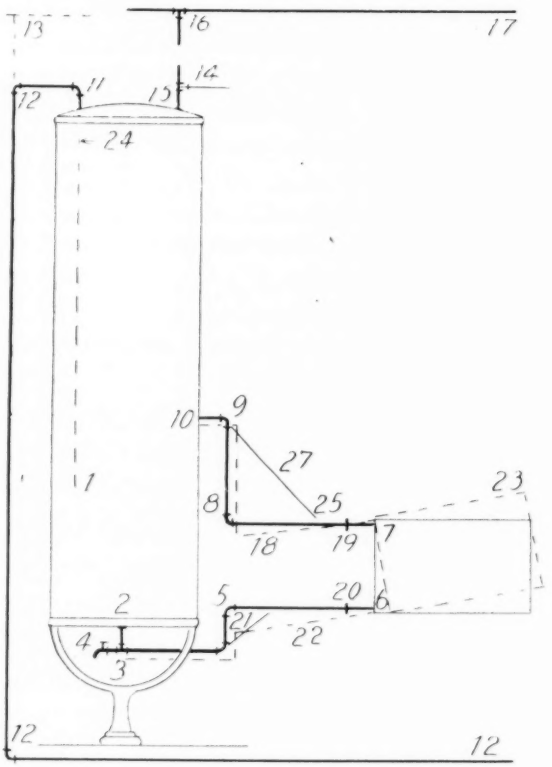


Fig. 1. The Range-Boiler and Its Connections.

From the manner in which the water has been made to pass through the water-front we have seen that the hottest

water will be at the top of the range-boiler and the coldest at the bottom. When a faucet is opened the hot water starts to leave the boiler at point 15 and more cold water is admitted into the coldest in the boiler at point 1. If the drop-tube were not in the boiler, the cold water would most probably rush across (or a part of it would) from point 11 to point 15, giving cold or possibly lukewarm water from the hot-water faucet at whatever fixture was being used. This same thing might happen, to a somewhat less extent, if a careless or ignorant workman drilled or filed the hole at 24 too large in the drop-tube, as I once found to be the case when called to look over a job where they did not get the water hot enough at the fixtures, so here is another point in favor of the use of the vacuum-valve.

Now, though impractical, careless and entirely unnecessary, for hundreds of sermons have been delivered on this subject, it will be found that, in numerous cases, the pipe numbered 7 and 8 will have a pitch in the wrong direction. I wonder if these careless fellows think that the hot water will flow equally well down the grade? At times one finds these connections made nearly as much to the bad as is shown by the dotted line immediately under the pipe 7, 8. If a workman hasn't enough of a mechanical eye to catch the proper slope, let him carry a small pocket level and use it frequently. As a general thing, the water-front (or back) will lay level in the fire-box. It is not always the case, however, and may be frequently installed out of level, thus giving the chance for the forming of an air-pocket which will raise the deuce in general. The dotted line water-back is intended to call attention to this. The heavy lines in the drawing are supposed to represent what might be called a typical installation. There might be certain points of difference, such as a continuation of 12 to 13 and 12 to 11 taken off from the tee. As we proceed some points of difference will be shown and other drawings will be given as needed.

NEWS FROM OHIO.

Elyria, O.—The Oberlin Gas & Electric Co., of which Albert E. Hay was general manager, has gone into the hands of a receiver, George F. Hart, treasurer of the Cleveland Savings and Trust Co., being named by the court. Several suits against the company have been pending for some time and the business has been in a bad tangle. Under the order of the court the receiver is permitted to continue the business of the concern for the time being.

Maysville, O.—E. H. Saunders, of the Saunders-Watrous Plumbing Co., Marietta, O., is in charge of the branch store opened June 1st. A large room has been rented in the While building for the branch store. Natural gas has been piped to Maysville and will be turned on early in the month, and it is anticipated that there will be considerable plumbing work as a result. Mr. Watrous will remain in charge of the Marietta store.

Columbus, O.—The Huffman-Conklin Co. was one of the low bidders for the plumbing and heating contract for the general hospital buildings at Cincinnati. A Cincinnati firm was the lowest bidder but this bid is declared to be irregular.

Swift & Herbert, of Coshocton, O. owners of the patent by which pipes are made under the Herbert system, have just closed a deal with the U. S. Steel Co. permitting that company to use their system, for which they receive a bonus of $90,000. Several prominent officials of the U. S. Steel Co. were in Coshocton recently and it was then the deal was consummated.

Akron, O.—Bids were opened recently for the construction of a public-comfort station at Main and Market streets. Upon a former occasion bids for the same work were received but all were rejected because they were too high.

Akron, O.—Water experts Barbour and Bradbury will make their report some time in June. They will recommend the building of a new water-plant at a cost of $1,500,000 and will also recommend that the old plant be not purchased.

Lorain, O.—Plans have been prepared for the construction of an outside settling basin for the filtration plant.

Zanesville, O.—Consulting Engineers Johnson & Fuller, of New York, have prepared plans for a water system and 8,000,000 gallon filtration-plant. The estimated cost of the work is $250,000.

Columbus, O.—The S. A. Esswein Plumbing & Heating Co. was the lowest bidder on remodeling the plumbing and heating systems in the East Main street school building, the Fifth avenue school building, the Spring street school building and the Hubbard avenue school building.

Delaware, O.—Plans have been prepared by G. S. Irwin, city engineer, and Riggs & Sherman, of Toledo, O., for the construction of a sewage-system and disposal-plant, estimated to cost $25,000. Bids for the work will be received some time in July.

Greenfield, O.—George Taylor has been awarded the contract for the hot-air furnace to be installed in the residence of Mrs. Margeret Wilson on South street.

Mansfield, O.—Contracts for a number of improvements to the water-works system have been awarded as follows: For 260-h. p. Corliss engine to Hooven, Owens, Rentscheler & Co., Hamilton, O., $3,200; for pumps, to Henry R. Worthington.

Oak Harbor, O.—The American Warming & Ventilating Co., of Toledo, O., has been awarded the contract for the installation of the heating, ventilating and plumbing in the new school building.

GOVERNOR DENEEN SIGNS "DEATH-CUP" BILL.

Governor Chas. S. Deneen put his signature to the "death-cup" bill Tuesday afternoon, June 6th. After July 1st the public drinking cup will be a legal impossibility in Illinois. Senator Manny, Democrat, of Mount Sterling, and Representative Tice, Republican, of Greenview, introduced identical bills in each branch of the legislature. The Manny bill was passed in the senate without difficulty and in the house was given the right of way over Tice's measure. It was the last senate bill called on third reading in the house on the final night of the session and received 79 votes, or two more than enough, when the house was about to break up. The bill prohibits the use of the public drinking cup upon any railroad train or common carrier, in any public school, theater, public hall, or in any place used for public purposes. By the law the common cup is eliminated from all the state institutions, educational, eleemosynary, and otherwise.

"Drink to Me Only With Thine Eyes."
—John T. McCutcheon in "Chicago Tribune."

THE JOURNEYMAN AND HIS HELPER

JOIN HANDS FOR BETTER WORK

THE HARDEST MAN I EVER WORKED UNDER.

Editor "Domestic Engineering":—You asked some questions a spell ago and I will answer this one, not because I believe in knocking, but because the fault in this man I worked under is so very common and could be remedied so easily. I will not describe the man personally nor dwell upon any of his other actions. He had a good shop and fitted the men out with fair tools. As far as such matters go, I believe that he was better than the average master. That is one reason why he did not have much trouble in getting plenty of help, but they did not stick to him.

This fellow always had some fault to find. If a brass band on the pipe-covering happened to be a trifle out of place, he would raise more commotion about it than some masters would if the boiler had gone up. Not only that, but he did not have sense enough to let the matter drop after having had his say, but would refer to it in a sneering and sarcastic manner for weeks afterwards. Consequently, he always had a string of grievances to air and did so, instead of ever looking for some good points to mention. This always got on the nerves of all the boys, making them more or less cranky, and gradually they got into the notion that they did not give a damn as to how the jobs panned out. This fellow was ungrateful and unappreciative and unable to keep his men for long at a time, as the result of his treatment.

O. K.

A HELPER GIVES SOME POINTERS ON A GOOD JOURNEYMAN.

Editor "Domestic Engineering":—In one of the former numbers you asked for some of us helpers to tell you about the best journeyman that we ever worked under and so I thought that I would take a little time off this evening. I struck this journeyman out in the state of Nebraska and was with him for nearly three months. He didn't do so extra much talking, but what he said went straight home every time. He never asked me to do anything that he was not perfectly willing to do himself and after we got better acquainted he would, now and then, shoot a question into me as to what I did when I was not in the shop. When we were on some work in a place upcountry about a hundred miles from the city where the shop was, this fellow asked me to his room one night and began talking to me about learning to draw some of the plans. He took a pencil and paper and gave me some pointers and got me interested. I will finish my time very soon and, thanks to him, I can now put up a good drawing and have read several of the books on the craft, and I lay the start of it to the way in which this fellow went at the matter and got me going. It isn't so many of them that will take any pains at all with the helper and I sure did remember this man.

F. G. M.

AN EMERGENCY CASE.

Editor "Domestic Engineering":—I see in "The Journeyman and His Helper" you ask what to do if one should be summoned by 'phone to a house where the waterback in the stove had exploded. You further state that some one had already attempted to turn off the water at the stop and waste, and that it was stuck fast. That would probably be the first point that the plumber would go to, and if he could not turn the handle of the stop and waste, he would most likely put a wrench on it and force it shut. If it stuck so tight that it could not be started with the wrench, which is occasionally the case, and not knowing where the street key could be found, I would at once disconnect at the meter and cap the pipe; if I did not have a cap in the kit, I would hastily whittle a wooden plug and drive it into the pipe. This would cut off the pressure and leave only the water in the boiler and pipes to be disposed of in the mix-up. In kitchens having a cement or hardwood floor and hard-finished walls, the hot water and steam would not do very much damage in the course of half an hour, while in the old-fashioned kind of kitchen it might raise "hob."

"Ned."

SOME OF OUR BOOK READERS.

Editor "Domestic Engineering":—Answering your question as to the names of the books in the craft, I will give two that have helped to give me a better insight into matters. I work in a shop where I sometimes have to help on the plumbing and at other times on the fitting. The heating book is one that you publish and is written by Prof. John R. Allen. "Notes on Heating and Ventilation" is the name of the book. This work has given me many points in a mighty practical way and the chapter that probably did me the most good was the one on heat losses. I know that most of the helpers never read or study any, but I am in this for keeps and what I get from the shop is not enough, so I read up some. The book on plumbing that gave me a big lift is Cosgrove's "Principles and Practice of Plumbing." The first and second pages of the book gave me the best look in on the plumbing work, summed up generally, that I ever had. The rest of the book of course deals with the subject directly, but the best general idea that I ever got was from those first two or three pages. I think that you are doing a lot for the boys in your different departments, and I read them carefully from week to week and get good points from each number. I will answer some of the other questions that you have asked another time.

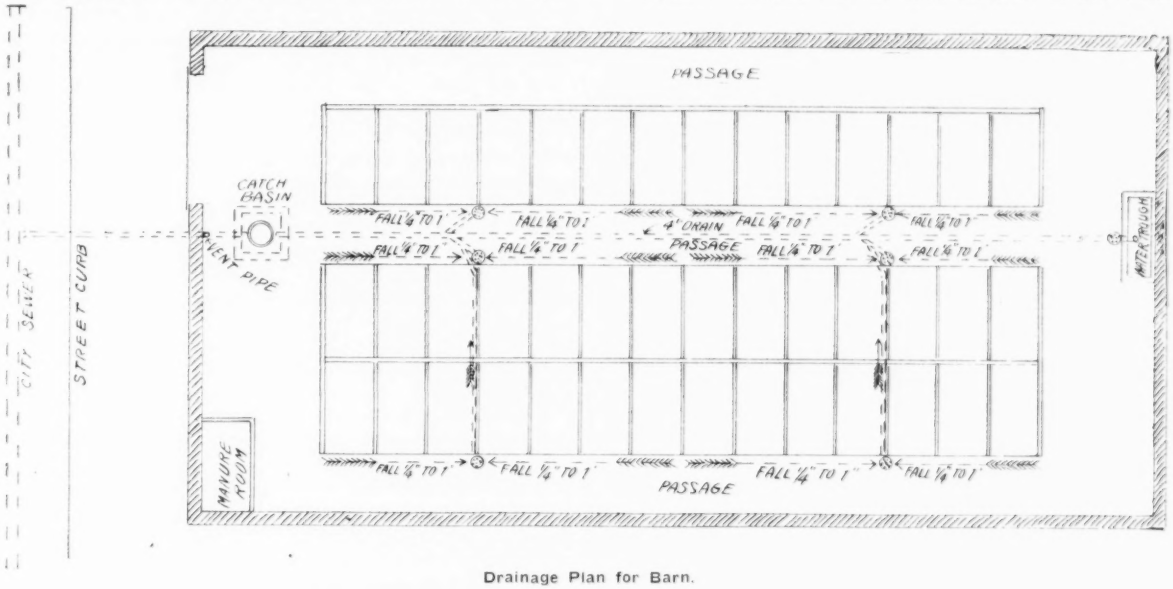
Reader.

Stevens Point, Wis.—The Stevens Point Plumbing Co. is the name of the new firm which has succeeded P. M. Adams at 123 Strong Ave. John Finch, the new proprietor, who is a traveling salesman for plumbers' supplies, has engaged M. J. Lee as foreman. Mr. Lee has given up the shop which he has been conducting on Main street.

THE CONSTRUCTION AND CARE OF BARNS IN REGARD TO LIGHT, VENTILATION AND DRAINAGE.*

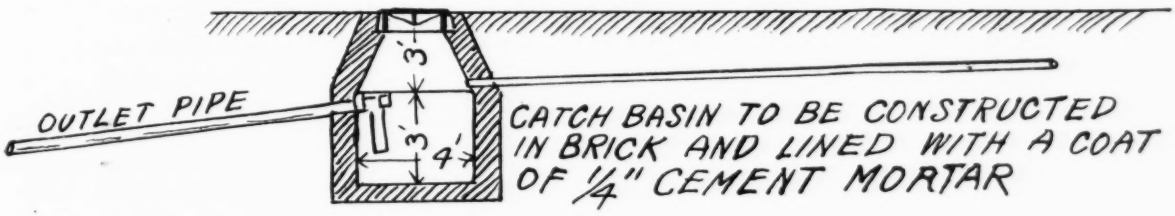
By Wm. Hey, Plumbing Inspector, of Portland, Ore.

It is unnecessary to go into details regarding the spread of disease caused by flies, rats, etc. "A man's foes shall be they of his own household," is good science as well as scripture. The fly is a domestic animal and household pet, whether we are proud to acknowledge it or not. Man's refuse, or that of his domestic animals, is absolutely necessary to the development of the fly.



Drainage Plan for Barn.

Science also informs us that rats are the cause of the spreading of bubonic plague, by the carrying of infected fleas. The keynote is to destroy the breeding-places of flies, rats and other vermin, as far as possible, and the only way to eliminate such menaces to health is to destroy the cause. Hence the necessity of sanitary regulations in the construction and care of barns.



A Sanitary Catch-Basin for Barns.

The first principle of sanitation is sunlight and air. The air-space should be regulated in accordance with the number of animals; 500 to 1,000 cubic feet of air-space should be required for each animal. Cubic air-space is not an important factor in ventilation, but there is a certain minimum space required for each animal which must never be disregarded. Floor-space must be considered as much as mere cubic-space. In a stable, each horse or cow should have 100 square feet of floor-space. (Climate should be taken into consideration.) A horse should have 1,600 cubic feet of air-space and a cow not less than 1,200. As cows are usually kept to furnish milk for food, it is important that they should be kept in a healthy condition and that the air around them be clean. These are the first considerations for a sanitary barn.

Second: Require full water-tight floors of non-absorbent material, sloped to secure proper drainage.

Third: Require that rat-proof bins be installed in all barns for the purpose of storing feed.

Fourth: Require that no food material of any kind, with the exception of canned goods, be stored or kept in such buildings.

Fifth: Require that air-tight manure rooms or boxes be provided inside of such buildings, same to be ventilated by an air-shaft or flue with an area equal to 120 square inches. Contents of boxes to be removed at least once a week.

Sixth: Require that horses or cattle shall not be kept on any floor except the ground-floor in any building except a Class A building, the ground-floor not to be more than five feet below nor five feet above the street grade, so as to provide light and ventilation.

Seventh: Require that there shall be at least one opening direct to a street or to other open area, which said exist shall be at least eight feet in width for every 2,500 square feet of floor area. All aisles shall be at least six feet in width and shall be kept free from all obstruction which may tend to prevent animals from escaping in case of fire.

*Read before the sixth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held in Milwaukee, Wis., Feb. 6, 7 and 8, 1911.

Veterinary surgeons that I have consulted about the standing of horses on cement floors seem to disagree; some stating that cement floors are injurious to the horses, and others claiming no harm is caused. Cement is about the best material for barn floors, asphalt, etc. being practically useless on account of the action of urines on such material.

The above difference of opinion can be overcome by allowing wooden slats in stalls for the horses to stand on, said slat floor to be made the same as a cellar-door, divided in the center of stall, and provided with hinges so same may be raised and cleaned out.

Drainage.

The accompanying blue-print with a few remarks will be self-explanatory. The object in having a catch-basin is to have a grating for a cover so as to wash wagons, etc., over same. This would act as a sand-trap and also as a fresh-air inlet to drains under floor. The stall-drains have no traps, only a steel strainer, so same could be removed and drain flushed with a hose. These, too, should act as fresh-air inlets, as the main drains and branch lines run through the roof.

Important Factors in Barn Construction.

As barns are generally built of inflammable material, as well as stored with same, provisions should be made to guard against fire: First, by requiring better buildings than are generally erected for this purpose. Second, by prohibiting candles, oil-lamps, or gas-lights, (unless protected by screens), and by having all electric wires run in conduits. Third, By installing stand-pipes with hose and reels in different parts of the building.

"WHY IS AN UTILITY CORRIDOR?"

By A. R. McGonegal.

One can readily perceive why the usual utility corridor is an absolute necessity in prison construction, and why it might be desirable to provide for the concealment of certain pipes in connection with the ventilation of a public toilet-room which may be used by all classes of citizens, but it has been a mystery to the writer why nearly every designer of a plumbing layout for school buildings should blindly adopt this time-honored plan.

The advocate of the utility corridor construction will tell you that the corridor is for the dual purpose of permiting a workman to repair the tanks and pipes enclosed therein, and also to provide a vent space for the intake-end of the ventilating-flue. As a ventilating proposition, there does not appear to be anything wrong with the argument, but why one should desire to hide plumbing fixtures and appliances when it is unquestionably better to have them of substantial construction and exposed to the sun and air as much as possible, I do not understand.

It would not be expected that the plumber would be allowed to work in the girls' utility corridor during the time the school was in session and the girls' toilet-room in use, as it is customary to exclude the janitor from the room during such period. It is much easier to get at fixtures upon the face of the wall, and much time can be saved over the cramped work in a dark and limited space.

The employment of the utility corridor construction in the average school toilet-room, which is generally lighted on two sides only (and frequently on one side only), banishes the sanitary agency of sunlight on at least one battery of closets, placed as they are back to back. This construction also places the water-closets in such a position that the two or three located nearest the door get the majority of the usage, thereby creating a possible condition in the future when two or three closets or perhaps half the installation, will be worn out and unfit for service, while the balance are comparatively free from defect, and in condition to be of use for several years.

The utility corridor construction, unless doors open into the public hallway from two locations in the room, places a certain number of the closets on the far side of the battery out of direct range of the door and consequent supervision, and might well lead to pernicious practices on the part of the younger pupils in the comparative solitude of the little-used side of the battery.

One very serious fault which can be found with this construction, especially when it is placed out in the center of the room, is that there is a tendency on the part of the pupils to race around it and make a playroom of the toilet. This running around sometimes causes damage to the wooden or slate enclosure work, as the case may be, on account of the pupils grabbing the corners as they run, enabling them to make a shorter turn; and the more or less constant racking to which the enclosures are subjected causes them to become loose in a short time.

As a rule, the placing of the closets along one or more walls with necessary vent spaces back of them allows plenty of light to reach every corner; allows the teacher or other authority to see every bit of the room from a position in the doorway, and on account of the comparative ease and silence with which the doorway is reached from the hall, discourages the pupils loafing within the room and removes the chance for lack of observation which is necessary for the pupil who is inclined to improper practices.

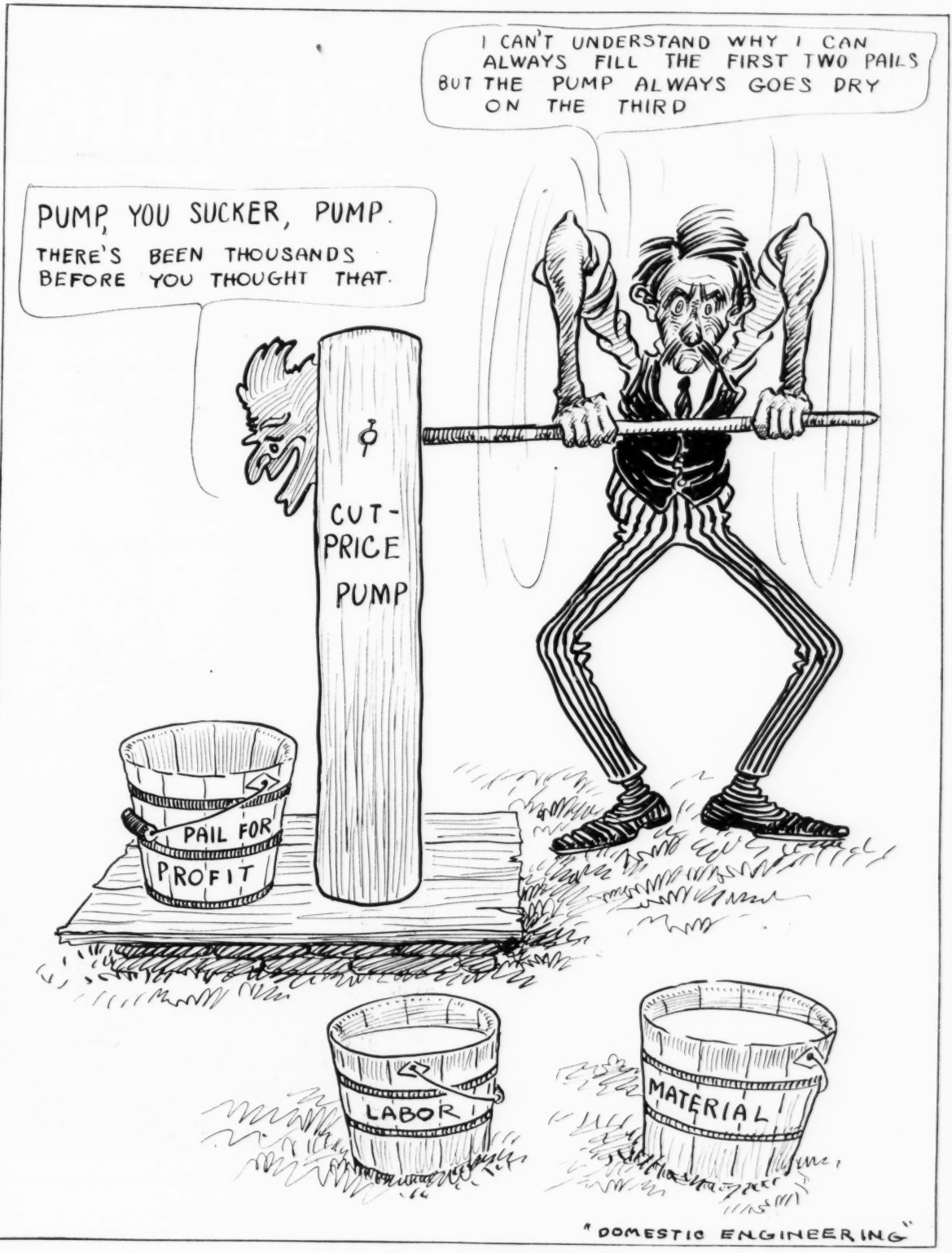
The writer a number of years ago made the mistake of laying out a series of school-house toilet-rooms without having gone into the matter carefully himself, accepting the time-honored and customary utility corridor plan. Almost immediately upon completion and use, the objections to this style of construction manifested themselves, and this instance has always been much regretted but never repeated.

This is perhaps due to the fact that the writer has been concerned for several years in problems of supervision and maintenance, as well as design and construction, and has thus been in a position where he could readily see the defects of the utility corridor system, as applied to public-school planning.

WILLIAM McINNES PASSES AWAY.

William McInnes, who has conducted a plumbing establishment on West Lake street, near Western avenue, Chicago, for the past 18 years, died at his home in this city on Saturday, June 3rd, in his 68th year. Mr. McInnes served his apprenticeship in the plumbing trade with John Hughes, one of the most notable of Chicago's pioneer master plumbers, from 1861 to 1865, under the tutelage of David Whiteford, who was at that time a journeyman in the employ of Mr. Hughes. Later Mr. McInnes was foreman for E. Baggot for many years, following which he served M. J. Corboy in the same capacity until 1893, when he embarked in the plumbing business on his own account. His burial took place at Rosehill cemetery on Tuesday, June 6th. Among the many well-known Chicago master plumbers who attended the funeral were the following: David Whiteford, P. Nacey, J. E. Baggot, M. J. Corboy, David Bain, Joseph Riley, Alexander Murray, John C. Naughton and L. Juergens.

"Domestic Engineering" "The Pump That Goes Dry."—XLI.


I CAN'T UNDERSTAND WHY I CAN ALWAYS FILL THE FIRST TWO PAILS BUT THE PUMP ALWAYS GOES DRY ON THE THIRD
PUMP, YOU SUCKER, PUMP. THERE'S BEEN THOUSANDS BEFORE YOU THOUGHT THAT.
CUT-PRICE PUMP
PAIL FOR PROFIT
LABOR
MATERIAL
"DOMESTIC ENGINEERING"

Pumpers Like This One Soon "Wreck the Bucket".

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

AMONG THE WHOLESALERS

STANDARD MFG. CO. TAKES OVER JOS. F. GROSSWILLER COMPANY'S BUSINESS.

The Standard Mfg. Co., of Pittsburgh, Pa., and Toledo, O., announces that it has taken over the Joseph F. Grosswiller Co., in the latter city, and that the business will hereafter be conducted at 311, 313 and 315 Erie St., in the name of the Standard Mfg. Co., and under the management of Joseph F. Grosswiller.

WILL MAKE HYDRAULIC APPLIANCES.

The Engineers' Appliance Co., of Cleveland, O., has been incorporated with a capital of $20,000 to manufacture steam and hydraulic appliances and equipment of all kinds. The incorporators are: J. F. Doolittle, A. P. Fothergill, R. J. Venning, B. F. Sillman and F. R. Evarts.

THE HOLLEY-MASON HARDWARE CO. SELLS ITS PLUMBING-SUPPLY DEPARTMENT.

The Holley-Mason Hardware Co., of Spokane, Wash., has sold its plumbing-supply department to Hughes & Co. in that city. J. M. Dutton, who for several years has had charge of the plumbing-supply department of the Holley-Mason Hardware Co., has associated himself with Hughes & Co. and will assume the duties of buyer and general manager of that company.

WILL DEAL IN PLUMBERS' SUPPLIES.

The Coghlin Machine & Supply Co., Toledo, O., has been incorporated with an authorized capital of $20,000 to deal in pipes and plumbers' supplies, in addition to a full line of machinery. The incorporators are: William Coghlin, James A. Kirkby, Joseph H. Rutherford, Ray E. Rutherford and D. M. Coghlin.

D. A. RAYMOND PURCHASES THE SANDERS INTERESTS IN THE FEDERAL-HUBER CO.

Donald A. Raymond, vice-president of the Federal-Huber Co., of Chicago, New York City and Detroit, has purchased the interests of A. D. Sanders and A. D. Sanders, jr., general manager and treasurer respectively of that company, from which offices these two gentlemen have resigned. Mr. Raymond, besides being vice-president, assumes the office of treasurer. The office of general manager has been abolished and the business will hereafter be managed by Mr. Raymond and Alton F. Johnson, the secretary of the company. A. D. Sanders was the organizer and the active head from the beginning of the Federal Co. Starting in 1896, with a small capital, the company has grown to be one of the factors in the plumbing-supply trade, not only in Chicago, but through a large part of the country, as it now has branch houses in New York and Detroit. Mr. Sanders has been connected with the plumbing trade for the past 23 years and he has served as president of the Central Supply Association and of the National Association of Brass Manufacturers, and also as a member of the National Committee of the Confederated Supply Associations. A. D. Sanders, jr., has been identified with the Federal Co. for the past seven years and during the last five years as treasurer. Neither of these gentlemen have announced their plans for the future.

NATIONAL SUPPLY CO. SELLS ITS PLUMBING-SUPPLY DEPARTMENT.

The National Supply Co., Toledo, O., announces that it has sold its entire stock of plumbing goods to the Standard Mfg. Co., of Pittsburgh, Toledo and Cleveland. The National Supply Co. will continue to handle all its other lines, including house-heating boilers, steam goods, mill supplies, gas and oil-well supplies, etc. The above change became effective June 1.

PERSONAL MENTION.

Thos. C. E. Hunter, for many years representing the American Radiator, Co. in the Southwest, has severed his connections with that concern and made arrangements under which he will handle the United States Radiator Corporation's products out of its Chicago Branch.

Alex M. Buchman, sales-manager for the Glauber Brass Mfg. Co., Cleveland, O., has just returned from a business trip to the Pacific Coast. He reports business good in that part of the country.

Walter E. Barnes, manager of the Thermograde Valve Co., Boston, was registered at the Congress Hotel in Chicago this week.

WESTERN TRADE GOLF ASSOCIATION OPENS SEASON.

The Western Trade Golf Association held its first tournament of this season at the Calumet Country Club, near Chicago, on Wednesday, May 31st, as briefly reported in

Members of the Western Trade Golf Association.—Reading from Left to Right They Are: E. Buehler, J. F. Tuttle, R. B. Flershem and J. E. Holland.

last week's issue. The game was favored with ideal weather, and it was the first game played under the new "blind handicap" system, worked out by the association's handicapper, J. P. Dugger. General satisfaction with the new scheme was expressed by all in attendance. The

official scorekeeper's card shows the following result of the game:

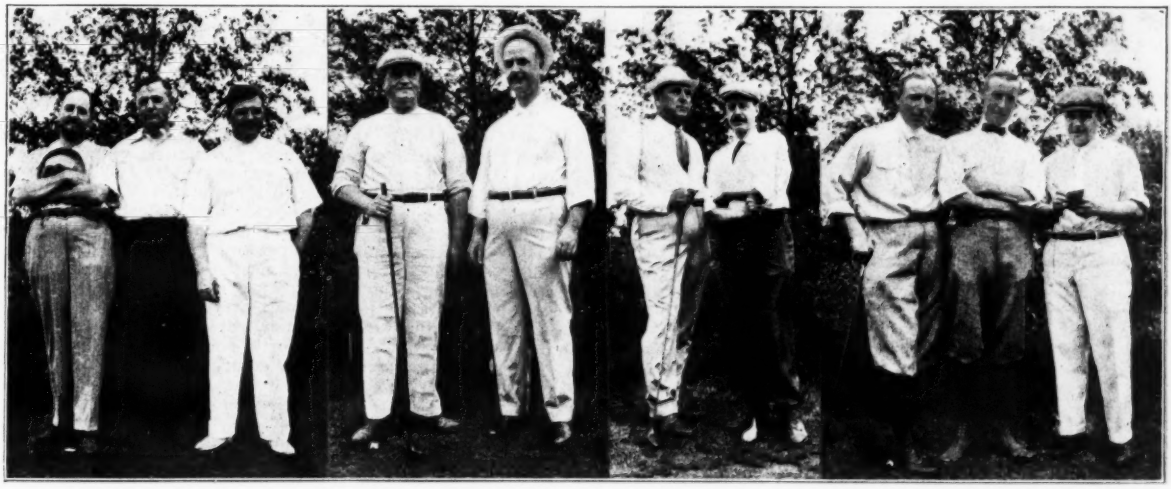
	Qualifying.	1st 9.	2d 9.	Gross.	Hdcp.	Net.
First Flight—						
J. W. Watson	42	45	44	99	8	81
F. M. Bailey (winner)	51	51	52	103	20	83
A. S. Armagnac	51	53	51	104	10	94
R. R. Sterling (runner-up)	51	51	48	99	12	87
Second Flight—						
D. E. McCabe	51	52	58	110	18	92
Paul Blatchford (runner-up)	52	45	52	97	14	83
S. O. Dugger (winner)	52	46	44	90	8	82
R. W. Newton	53	48	52	100	8	92
Third Flight—						
J. P. Dugger	53	55	59	114	20	94
R. B. Flershem (winner)	54	56	51	107	20	87
J. F. Tuttle	55	61	55	116	25	91
J. E. Holland (runner-up)	59	57	56	113	24	89
E. Buehler	60	61	59	120	30	90

J. W. Watson won Low Gross at 40 strokes in qualifying round, and E. Beuhler High Gross at 60 strokes in the same round.

No player was allowed to win more than one prize.

A feature of the tournament was the election of officers for the ensuing year, which resulted as follows: President, J. E. Holland; vice-president, D. E. McCabe; secretary, H. M. Sedgwick; treasurer, J. F. Tuttle; handicapper, J. P. Dugger; official photographer, A. W. Magill, all of Chicago.

"Domestic Engineering" is under obligation to A. W. Magill, the official photographer, for the excellent photographs shown herewith.



At the Recent Tournament of the Western Trade Golf Association.—From Left to Right They Are: Paul Blatchford, F. M. Bailey, S. O. Dugger, J. P. Dugger, D. E. McCabe, R. R. Sterling, J. F. Tuttle, R. W. Newton, J. W. Watson and A. S. Armagnac.

"THE PRINCIPLES OF SCIENTIFIC MANAGEMENT."

If you want to spend $1.50 wisely, and are prepared to do some tall thinking, you can invest the money profitably in the purchase of "The Principles of Scientific Management," by Frederick Winslow Taylor, past-president of the American Society of Mechanical Engineers. Harper & Bros., New York City, are the publishers. It is a magnificent attempt to stop the serious waste of time in modern labor operations. It is an attack on "soldiering," innocent or intentional. It exposes the defective systems of modern shop and factory management, and points out a definite line of study, by means of which a system of increasing labor-efficiency from 30 per cent to 70 per cent can be developed.

Do not imagine that the book presents on any one page a cut-and-dried method for any one to follow. The author is too well balanced to make such a mistake as that. He presents, however, separate cases in different industries, showing the exact steps that were taken to accomplish what we would consider phenomenal results. The best way we can explain what we mean is to state that in one case, at the plant of the Bethlehem Steel Co., the efficiency of one man in the pig-iron gang was raised from loading 12½ long tons per day to 47 tons per day, without imposing any hardship on the man, and profiting him by giving him 60-per cent increase of daily wage. The book furnishes valuable clues to profitable reforms along analogous lines. "Soldiering" is common enough in the plumbing and steam-fitting industries to warrant serious consideration of it by those engaged in them. Thinking men can pay a big dividend to themselves by investing in "The Principles of Scientific Management" $1.50 in cash, a number of hours in study and brains to the amount required. You can obtain the book through the Book Department of "Domestic Engineering."

JOHN DOUGLAS CO'S. SAN FRANCISCO SHOWROOMS.

The John Douglas Co. continues to improve its showroom on Mission street, San Francisco, Cal., but has a number of bath-room accessories to install before the display is to be regarded as being complete. This concern is well located downtown and its display room on the second floor of the building it occupies is without doubt one of the finest fitted up there. The display can be easily seen from the street, as the second floor is fitted with plate-glass windows, and is visited by many. The San Francisco manager, Garland Mitchell, is one of the youngest men in the country to hold such a responsible position, but he has been brought up with the Douglas interests and is thoroughly conversant with the business. Mr. Mitchell attended the master plumbers' convention held at Fresno last month and also had an assistant with him to aid in giving the glad hand. While no very large contracts have been secured of late, a number of big deals are under way and during the summer a big business is anticipated.

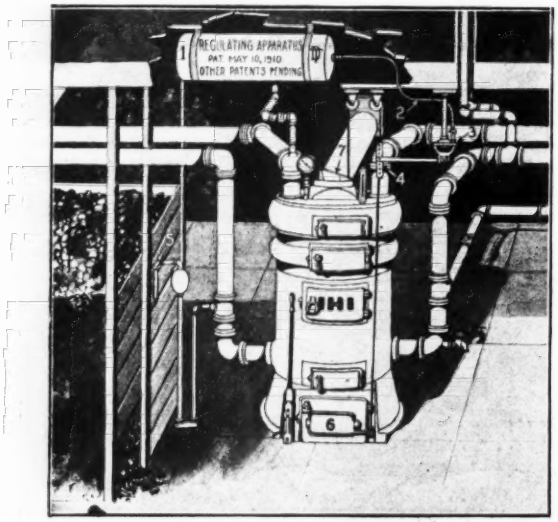
SIDNEY S. BREWER DEAD.

Sidney S. Brewer, a well-known heating-specialty salesman, died at his home in Chicago on Tuesday, May 23rd, in his 74th year. Mr. Brewer was born in Brooklyn, N. Y., in 1838, and spent a large part of his life in St. Louis. After coming to Chicago he became connected with the Norwall Mfg. Co., and he was for the last five years in the employ of the Dole Valve Co., Chicago. He remained at his work there until five days before his death, when he went home sick. He had a large circle of friends who will regret to hear of his demise. His wife and a daughter survive him.

THE D. & T. HEAT REGULATING SYSTEM.

The D. & T. Mfg. Co., 1915 Hamilton Ave., St. Louis, Mo., has been organized with a capitalization of $30,000 to manufacture and market an automatic hot-water regulator and circulator, which will invite the rigid attention of all heating-engineers. The officers of the company are: President and manager, J. M. Doherty; secretary and treasurer, H. C. Tatler.

Perfect circulation and automatic control of the temperature of hot-water is a desideratum of all hot-water heating systems, but the chief trouble to the housewife is the need of having to go down every hour or two to see if



The D. & T. Heat Regulating System Installed.

the fire is going all right. Not that she has to, but she imagines she has to. She tinkers with it until the fire becomes exhausted, and when she thinks she has it about right, it goes out in disgust. Few self-respecting fires would do otherwise than resent the maltreatment they receive at the hands of those who are supposed to care for them intelligently. In fact, there should be a Society for the Prevention of Cruelty to Fires.

The D. & T. Mfg. Co. has constituted itself this society, and, furthermore, garantees to every housewife that she need no longer invite the risk of breaking her neck, by avoiding chasing down to the basement in high-heeled French slippers. The D. & T. automatic hot-water regulator and circulator is claimed to be the solution of all these problems. A study of the illustration will show immediately its essential principles and method of operation. The apparatus consists of one expansion-chamber, one pressure gage, one mercury relief-trap, one diaphragm and connections, and one adjustment-plate, chain and pulleys and necessary trimmings.

The expansion-tank, which is air-tight, and proportioned to the amount of radiation to be controlled, is shown at Fig. 1. It is connected to the diaphragm at 3 by a small lead tube at 2.

The diaphragm operates a lever, connected with the adjustment-plate at 4. Fig. 6 is the draft-door, and this is connected with the adjustment-plate at a check-damper at 7 by means of a chain. Fig. 5 is a mercury relief device, which will hold back only 10 lb. pressure above the altitude or hydrostatic pressure.

A column of mercury is fixed for a predetermined pressure, above which an immediate relief is afforded to the system. Only the surplus water is discharged, without creating any vacuum on the system, the expansion forcing the water up through the mercury. All the air below the tank is confined in the diaphragm and chamber in the same manner that it is in the air-chamber on a steam pump. When the system has been filled, fire is started under the boiler and the water expanding rushes in the chamber 12, compressing the air, which acts on the diaphragm, operating the lever, and thus regulating the draft. The apparatus readily responds to every change of temperature.

The company has already installed a number of its regulators and circulators in connection with hot-water heating plants, and they have given excellent satisfaction. A catalog and literature illustrating and describing every feature of this system of heat-control and hot-water regulation, will be sent on request. Mention "Domestic Engineering" when writing.

TRADE LITERATURE RECEIVED THIS WEEK.

The J. L. Mott Iron Works, New York, has issued a small booklet on its bubbling-cup drinking-fountains. These are made with imperial porcelain bowls or in enameled iron, for individual use or in groups, and in different styles and forms to meet the demands of private and public use in special artistic designs. You can secure a copy of this booklet on application to the company. When you write mention "Domestic Engineering."

The Milner automatic sanitary drinking-fountain is the product of the Milner Mfg. Co., Chicopee, Mass. Its construction assures a thorough washing of the nozzle both before and after drinking. Water is filtered through 3 cu. in. of quartz, the flow of water from the nozzle being controlled by an automatic valve to insure an even delivery. It is compact and easily installed. A descriptive folder of the device can be obtained from the company upon request. Kindly state that "Domestic Engineering" is the source of your information.

The Acme Mfg. Co., Toledo, O., are manufacturers of bath-room mirrors and fixtures, specialties, glass shelves, towel-bars, gas and gasoline water heaters and numerous other specialties, attractive to the plumbers and steam-fitters. The Acme gas water-heaters are substantially constructed, the castings being aluminum-fused, both on the inside and the outside, to prevent rusting. The copper coils are made from the very best 18-gage seamless drawn copper tubing, and tested to 300 lb. sq. in. actual water-pressure. All these different features are attractively described and illustrated in a new catalog recently issued by the company. It is well worth your study, and you can obtain it by application to the company, mentioning "Domestic Engineering."

The D. A. Ebinger Sanitary Mfg. Co., Columbus, O., is distributing its new catalog on the Ebinger ventilated toilet-room fixtures for schools, public institutions and factories. The company maintains that there should be no installation without ventilation, and that ventilation is the foundation of sanitation. Among the specialties illustrated in the catalog are an octagon ventilated urinal, a ventilated range-closet, a ventilated individual closet, and a porcelain-enameled low-down closet-tank. Sanitary drinking-fountains are also shown. The catalog is attractively illustrated and embodies several interesting features of closet ventilation which are well worth studying. You can study them for yourself by writing the D. A. Ebinger Sanitary Mfg. Co. for a copy of the booklet. In writing, mention "Domestic Engineering."

The Humphrey "Herald" is the latest child of the Humphrey Heater Co., Kalamazoo, Mich. The Humphrey people are no longer satisfied with making gas water-heaters, but they have got to tell everybody all about them. Not only that, they are expert tellers, and in their little house-organ, The Humphrey "Herald", they outline several interesting and profitable methods for obtaining fresh gas water-heater business. It is only a small booklet. It can be read from cover to cover in 30 minutes, but it says something on every page. We feel sure you would like to read page 9, on which the article appears "A Personal Letter that Greatly Increased a Dealer's Sales." We won't spoil the fun by telling you what it is. Write to the Humphrey company today and see if it has a message for you. Mention "Domestic Engineering" when you write.

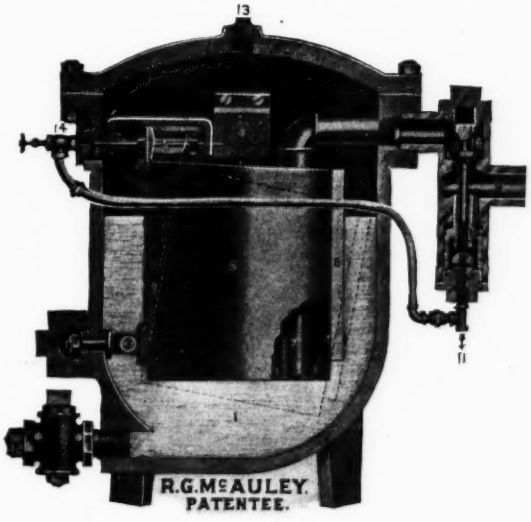
The Kellogg-Mackay Co., Chicago, has just issued its catalog No. 57, describing and illustrating "Kewanee" radiators for steam and hot-water. In the preface to this catalog the company states that it has adopted a new design for radiators, to be known as the "Kewanee," and has discontinued the manufacture of all other patterns.

Basing its ideas for the new radiators on past experience, it has aimed to put on the market a radiator which combines efficiency and durability with beauty. The section through the loop illustrated in the last pages of the catalog shows why it is efficient and durable, while the pictures of the different styles speak for its appearance. While catalog No. 57 does not, perhaps, describe "57 different varieties," as another famous advertiser does, it illustrates radiators plain and ornamental, suitable for any and all requirements. The illustrations are exceptionally good and the catalog is a work of art from the printer's standpoint. It contains an unusually large amount of information of interest to the heating trade, and deserves a place on the bookshelf of every steam-fitter and heating contractor. When writing for it, kindly mention that "Domestic Engineering" gave you the tip.

THE McAULEY AUTOMATIC STEAM-TRAP.

It has been established in actual practice that a 5/8-in. opening going into the atmosphere at 80-lb. pressure, will tax a 40-h.p. boiler to its limit in order to keep up the demand for steam-loss through an opening of such a size. This illustration shows how important it is to have every part of the steam-producing apparatus as free from leakage as possible. A leak means coal, coal means money, and money spent diminishes dividends. Many leaks can occur through defective steam-traps. The steam-trap par excellence, should be simple in construction, perfect in workmanship, efficient in action, and durable in service. These four essentials are cardinal points in steam-trap consideration. After these have been obtained, attention may be given to the other meritorious features of the trap being inspected.

The McAuley automatic trap has a most interesting mode of operation. A study of the illustration will show that it consists of a cast-iron hooded chamber, a hinged bucket, a discharge-valve and pressure-pipe, as its main features. In operation, the water of condensation enters behind the baffle-plate, shown at 4. This plate completely shrouds the mouth of the water-inlet, preventing any water entering the bucket in its admission to the trap. The bucket seen at 2, is made of hard-rolled copper, and



The McAuley Automatic Steam-Trap.

is provided with a brass hinge. The male part of this hinge extends to the top of the bucket, terminating in a forked-end. This fork engages, in alternate action, the collars shown on the needle-valve at 5.

When the water of condensation rises in the trap-chamber, the bucket is floated to a vertical position. The fork, engaging the left-hand collar in the illustration, closes the needle-valve, which controls the admission of steam to the pressure pipe at 6. When the water has risen high enough, it flows over the edge of the bucket and fills it. The weight of water in the bucket, assisted by a counter-weight attached to the opposite side of the bucket from the hinge, tilts the bucket, as shown by the dotted line in the illustration.

In tilting, the bucket-fork acts on the right-hand collar, opening the needle-valve and admitting steam to the pressure-pipe, through the port at 15. Steam-pressure is immediately applied through the pressure-pipe beneath the piston at 10, which forces the valve at 16 from its seat. This provides an atmospheric-pressure differential in the discharge pipe, 7. Steam in the chamber acts on the surface of the water in the bucket, forcing the water through the pipe and through the discharge-valve at 9.

As the bucket is released from its load, it resumes its upright position, being floated up by the water remaining in the chamber. The bucket-fork again closes the needle-valve, steam is cut off from the pressure-pipe, and the port shown at 11 quickly allows the remaining pressure to escape from under the piston, thus seating rapidly the discharge valve, this being accomplished by the over-pressure in the chamber acting on the enlarged valve-surface. The operation of the trap by these means is continuous and automatic. The trap has no float, no stuffing-boxes, and no diaphragm. The discharge-valve is the only part that is liable to require repairs, and is made extra-heavy to ensure lengthy service. The McAuley trap is built for pressures ranging from 6 lb. to 300 lb. It is in use in many of the largest manufacturing and power-plants in the United States. The McAuley Automatic Trap Co., 3d St. and Penn Ave., Pittsburgh, Pa., will be pleased to furnish a complete catalog, describing its different styles of traps and illustrating the details of their construction. The McAuley automatic trap can be obtained also from the Pittsburgh Piping & Equipment Co., 949 People's Gas Building, Chicago.

YOUNGSTOWN, O., PLUMBING ORDINANCE TO BE REVISED.

A reduction of about one-third in the cost of procuring a permit for doing plumbing in a residence at Youngstown, O., will be made by the city officials of that iron and steel producing town. The plumbing ordinance is to be revised.

It is proposed to eliminate the charge of $1 for connecting with the sewer. The present charge is 50 cents for a fixture and $1 for a vent pipe, making the average cost for the permit $4.50. Besides the elimination of the $1 fee for attaching to the sewer, it is probable that the cost for fixture permits will also be reduced.

A clause will be inserted in the new ordinance to have the owners of big buildings pay for part of the time spent in inspecting the plumbing fixtures. On account of the large number of toilet-rooms in the big buildings, the cost of a permit is usually from $30 to $40, and much of the inspector's time is required to look after such places. Under the new arrangement, the average house will cost less and the big buildings more.

The plumbing inspector's office returned a profit of about $1,600 last year. The office is intended to be merely self-sustaining and the proposed reductions will eliminate the profit. The committee will recommend that no more inspectors be named because of the scarcity of funds under the new tax law.

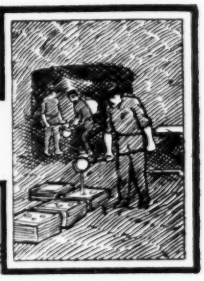
The action of a labor union endorsing the appointment by council of two additional inspectors, which was taken a few weeks ago, was the subject of some talk by members of the committee, who thought it strange that the men who had to pay the taxes and who complained of high taxes should want more inspectors who were not badly needed.

Globe Heating & Engineering Co., St. Louis, Mo. Capital stock, $2,000; incorporators, Frank E. W. Wheeler, Henry A. Dows and J. Warren Jones. The purpose of the company is to construct and generally contract for steam and hot-water heating plants.

The Kinston Roofing & Plumbing Co., Kinston, N. C., has been incorporated by S. H. Isler, R. E. L. Rhodes and L. E. Isler, with a capital of $4,000.

The Howard-Haley Co., Roanoke, Va., with a capital stock of $10,000, has been incorporated with the following officers: President, J. E. Howell; vice-president, J. M. Haley; secretary and treasurer, G. W. Howell.

THE METAL MARKET



A CUT IN STEEL PRICES.

The action of the Republic Iron & Steel Co. in cutting the price of steel bars may prove to be even a more momentous affair than it now seems. It can easily lead to an open war among the steel manufacturers, which would bring the price of finished products down to a level not known for a decade. Since the formation of the U. S. Steel Corporation in 1901 it has acted, so to speak, as the guardian of the steel industry. It is true that prices have been cut on previous occasions, but the punishment dealt the originators of the cut has generally been severe. In the present instance, however, conditions are slightly different. The Republic Iron & Steel Co. is backed by financial interests avowedly antagonistic to the backers of the Steel Corporation. Their plants are favorably located and what is more they have the sinews of war, in the shape of sufficient funds, to take care of current needs. Moreover, their product is widely diversified and lower prices will undoubtedly help their business. If the war extends to all lines of finished iron and steel, consumers will benefit and trade undoubtedly will revive. Without attempting to be muckrakers, we are of the opinion that the manufacturers controlling the raw materials going to make up iron and steel in this country as well as some other lines, notably lead products, have been securing a far greater financial return on their invested capital than the smaller tradesmen. Lower prices will undoubtedly mean diminished profits for the large industrial corporations, but it will also mean greater sales for the small tradesman, and an opportunity to recruit the losses he has sustained through several years of high prices.

A sale of Virginia pig-iron, or No. 2X foundry, was made at $12.25 furnace for the third quarter and $12.50 for the fourth quarter, compared with the previous quotation of $13. The market has been dull and quotations are as follows:

No. 2 Southern foundry, Birmingham	$10.50
No. 1 Northern foundry, New York	$15.50 to 15.75
No. 2X Northern foundry, New York	15.00 to 15.25
No. 2 plain, Northern foundry, New York	14.75 to 15.00
No. 2 Northern foundry, Chicago	15.00

OLD IRON.

The market continues inactive and there is almost complete absence of inquiry. Quotations are more or less nominal, as there has been little actual business by which to gage prices. These nominal quotations are as follows:

No. 1 yard wrought, long	$11.50 to $12.00
No. 1 yard wrought, short	10.00 to 10.50
Heavy-melting steel scrap	10.50 to 11.00
Machinery cast	11.00 to 11.50
Wrought pipes and tubes	10.50 to 11.00
Malleable castings	10.00 to 10.50
Wrought turnings	6.00 to 6.50
Cast borings	5.50 to 6.00
Stove plate	8.50 to 9.00
Light iron	4.50 to 5.00

A SENSATIONAL ADVANCE IN TIN.

The price of spot tin advanced buoyantly during the week and the London market is now nearly 3 cents a lb. higher than a week ago. In New York, however, the advance was not so violent, but quotations now are at the highest level of the year and in fact higher than any time since the spectacular rise of 49 cents was made in the early part of 1907. Tin for future delivery, however, is practically unchanged from a week ago and this movement has all the ear marks of purely professional operation. The London syndicate, however, is in a position to force prices to almost any reasonable level.

COPPER.

The market is stronger and a good business has been done on the advancing quotations. It is estimated that during the week sales for domestic consumption aggregated 25,000,000 lb. It is well known that the deliveries into consumption during April were smaller than the sales and the probabilities are that the statistics issued by the Copper Producers' Association for the month of May will be more satisfactory than in a long time. While electrolytic could be had early in the week at 12 cents, it is now squarely 12.12½ cents and Lake is 12.37½. The exports have been large, the probabilities being that they will aggregate nearly 60,000,000 lb. for the month.

LEAD.

The market continues dull. Prices are lower at 4.37½ cents New York and 4.22½ cents St. Louis. The American Smelting & Refining Co. continues to quote shipment lead at 4.50 cents.

SPELTER.

There seems to be a scarcity of spelter in the New York market. Prices are unchanged at 5.50 cents New York and 5.30 cents St. Louis.

CONTRACTS RECENTLY AWARDED.

Greensboro, N. C.—The Ange Construction Co., of Winston-Salem, N. C., has received the general contract for the erection of the Masonic Home at Greensboro. Hunt Bros., of Greensboro, were the successful bidders for the plumbing and heating work, five bids being submitted. The building, which is the first to be erected of a group, will cost about $20,000.

Colorado Springs, Colo.—The J. C. St. John Plumbing & Heating Co. has secured the contract for the plumbing and heating fixtures of the new Chaves Co., N. Mex., court-house. The contract is for about $12,000. The company has also the contract for the plumbing in the new high-school in Chaves Co.

Chariton, Ia.—G. W. Ensley has contract for heating and plumbing work on a new hotel at Milo, Ia. He has also contracts for heating plants on two fine residences to be built there for Clare Williams and E. J. Burgess.

Fulton, Mo.—Fisher & Neal have the contract for changing all the hot and cold-water pipes in the buildings of the state hospital. The legislature appropriated $11,000 for this work, and the only bid within the amount was from Fisher & Neal, although there were several other offers, including firms from St. Louis and other places. The institution expects to buy and have installed 20 or more shower-baths, $2,475 having been appropriated for this work, but all the bids submitted were above this limit, so the contract has not been let.

Clinton, Ia.—J. T. Cullen, of the Star Boiler Works, has the contract for the new heating-plant at the court-house, the present plant having been condemned by the Hartford Steam Boiler Inspection & Insurance Co., which carries the insurance on it. The price is $3,597, the old power-plant to become Mr. Cullen's property when removed. Two new boilers, to be set in a battery, will be 60 in. in diameter and 16 ft. long, and all the pipe-work in the power-house is to be replaced.

PACIFIC COAST LETTER

San Francisco.

The discussion as to who should do the work of laying steam-heat pipes in the public streets in San Francisco has been taken up again by the steam-fitters, and they are soundly scoring Mayor McCarthy for his stand in the matter. At a recent meeting of the Labor Council it was decided that this work should be done jointly by the members of the steam-fitters' and plumbers' unions, but it seems that a word from the mayor is necessary before this division is made. The company doing the work in the streets has announced to the steam-fitters that it is ready to divide the work as soon as the mayor expresses a willingness that it be divided, but in the meantime the plumbers are employed. A similar discussion arose when work was commenced on the laying of pipes for the auxiliary salt-water fire-protection system. Many journeymen plumbers are now being employed on work usually regarded as being out of the plumbing line, and as a result the members of this trade are now well employed. The steam-fitters, on the other hand, seem to have been given the worst of some of the late decisions in regard to their jurisdiction, and many of them are idle.

Within a very short time a decision is expected in regard to the selection of a site for the Panama-Pacific International Exposition and as soon as this is announced it is anticipated that a great deal of building will be commenced in the locality of the Fair grounds. Building is quite active now and contracts are averaging more than $500,000 a week. No contracts for large structures have been recorded in some time, but it is anticipated that there will be some large ones let in the near future. Both the St. Francis Hotel Co. and the Palace Hotel Co. are planning to make large additions to their structures, and work will be commenced at an early date on an apartment-house for Nob Hill that will cost over $700,000. Plumbers are now securing an increased amount of work and the outlook is that there will soon be a still further increase.

A. S. Mangrum, of the firm of Mangrum & Otter, has just returned from an eight-day trip through the Sacramento Valley and the southern part of Oregon with the members of the Merchants' Association, this being the third trade-extension excursion made within the past nine months by the wholesale members of that body. The idea of the excursions is to enable local wholesalers to become personally acquainted with their customers, and it is believed that by this means much more business will be attracted to San Francisco. Two more excursions will be made this season, one through the mountain section and another down the Coast as far south as Santa Barbara.

Letters have been addressed to the Board of Supervisors of San Francisco by a number of improvement bodies asking that the Lick baths be purchased by the city and that a swimming-tank be constructed adjoining the property. These baths were founded by James Lick and were designed to be used by the poorer classes.

George Wara has been awarded the contract for installing the plumbing system in the class C building being erected by N. Anderson on Ellis street, near Jones, the price agreed upon being $1,294.

Alexander Celeman has been awarded the contract for the plumbing of a five-story class C building being erected on O'Farrell street, near Leavenworth, by S. Chamberlain, the contract being valued at $1,525.

The Southern Pacific Railroad Co. is making an addition to its hospital in the vicinity of the park, and some heating and ventilating work is in order there.

Bids are being invited by the regents of the University of California for the installation of a heating and ventilating system in the new agricultural building now in course of erection on the campus.

William S. Snook & Son have secured the contract from the Board of Public Works for the plumbing work to be done in the new John Swett School, this contract being valued at $6,058. The heating and ventilating apparatus in this structure will be installed by Abrahamson & De Gear for $8,589, and the vacuum-cleaning system will be installed by the Pacific Sales Corporation, its bid of $870 having been the lowest received.

Hartland and Herbert E. Law, owners of the Monadnock building on Market street, have been given judgment in a suit for damages brought against the San Francisco Gas & Electric Co. The latter concern contracted in May, 1905, to supply steam heat to the Monadnock building but did not fulfill the obligation.

M. Levy, the Sutter street plumber, has been awarded a contract by Geo. T. Marye, jr., for the installation of the plumbing system in a five-story brick building being erected on Mission street at Seventh. The consideration mentioned is $7,850. Mr. Levy also has the contract for installing the steam-heating system for $2,746.

L. W. French, chairman of the board of directors of the Pacific Steel Co., arrived in San Francisco recently from San Diego.

D. H. Roberts, president of the Detroit Brass Works, has visited in San Francisco lately with his wife.

Berkeley, Cal.—The regents of the State University have just had constructed on the university property in the hills a large concrete swimming-pool, the use of which will be restricted to the students of the university. Plans have been made for the installation of shower-baths and these will probably be ready for use when college opens next fall. The water used will not be heated and will average a temperature of 67 deg. throughout the year, the supply being derived from a small creek.

Los Angeles, Cal.—The Blumve & Jay Co. has been awarded a contract for installing a water-tank and fittings for the Hall of Records at that place, the contract being valued at $1,187.

Hardwick, Cal.—The Phillips-Saulisbury Co. has just erected a store building and put in a line of plumbing goods.

Los Angeles, Cal.—The Ideal Valve Grinder Co. has been incorporated with a capital stock of $20,000 by N. E. Meredith, L. H. Schwaebe and L. A. Lothian.

San Diego, Cal.—The Modern Cleansers' Manufacturing Co. has been incorporated with a capital stock of $20,000 by B. J. Wandray, C. H. Christopher, M. C. Frey and others.

Los Angeles, Cal.—C. T. Shefeld has contracted to install a steam-heating system in the three-story factory building of the Western Lithograph Co. in the Johnson tract, the consideration mentioned being $1,760.

Los Angeles, Cal.—Strong pressure is being brought to bear upon the city council for the installation of additional public-comfort stations in the public parks. It is declared that the parks are poorly provided with these necessities, and a large appropriation is asked in order to better conditions.

Los Angeles, Cal.—The Union Hardware & Metal Co. is erecting several new buildings and M. J. Spencer has secured the contract to install the automatic sprinkler system in each of these. The contracts for this work aggregate more than $12,000.

Everett, Wash.—J. C. Lafreniere, of Boston, Mass., is on the Coast looking for a site for the erection of a factory to manufacture an improved type of water-heater. He is considering the proposition of locating at Everett, having a brother there.

Anacortes, Wash.—The Fox Heating Co., of Everett, has been awarded the contract for installing the heating plant in the Wilson Hotel.

Portland, Ore.—The Northwest Plumbing & Heating Co. has been incorporated by James Parks and associates.

Berkeley, Cal.—The Sanitary Plumbing Co. is installing the plumbing system in the new theater building being erected on Shattuck avenue.

Portland, Ore.—Following a warm argument as to the relative merits of various heating systems, the committee in charge of the work to be done in the Eastern Oregon Insane Asylum building has decided to have a hot-water plant and G. W. Kendall has been instructed to draw the plans for the plant.